



WESTPORT



UNDERGRADUATE BULLETIN - 1976 - 1977



Undergraduate Bulletin

**Catalog of Courses
1976-77**

**University of Wisconsin-Stout
Menomonie, Wisconsin 54751**

AN EQUAL OPPORTUNITY UNIVERSITY

For information concerning the University or
any of its programs, write to: Director of High
School Relations, University of Wisconsin-
Stout, Menomonie, Wis. 54751

Volume 60

DEGREE PROGRAMS OFFERED

INDUSTRY AND TECHNOLOGY

— 27

Business Administration
Industrial Education
Industrial Technology
Technical Education
Vocational Education (T & I)

HOME ECONOMICS

— 39

Child Development and Family Life
Clothing, Textiles and Design
Dietetics
Early Childhood Education
Fashion Merchandising
Food Service Administration
Home Economics in Business
Home Economics Education
Hotel and Restaurant Management

LIBERAL STUDIES

— 56

Applied Mathematics
Art
Art Education
Marketing and Distributive
Education

EDUCATION

— 64

Psychology
Vocational Rehabilitation

MINORS

— 70

Art	Journalism
Biology	Mathematics
Business	Physical
Administration	Education
Chemistry	Physics
Computer Science	Psychology
Economics	Safety
English	Sociology
History	Speech

CONCENTRATIONS

— 34

Building	Plant Engineering
Construction	Power Mechanics
Electronics	Product
Graphic Arts	Development
Industrial	Technical Sales
Graphics	and Service
Manufacturing	Technical
Engineering	Communications
Metals	Woods and
Packaging	Plastics
	Mechanical Design

ACCREDITATION

North Central Association of
Colleges and Secondary Schools
National Council for Accreditation
of Teacher Education

CONTENTS

GENERAL INFORMATION

The University	9
Admissions	11
Special Programs	12
Financial Information	15
Housing Information	16
Scholastic Standards	17
Financial Aids	19
Student Services	21

PROGRAMS OF STUDY

Major Programs	27
Minors	70

COURSE DESCRIPTIONS

Industry and Technology	79
Home Economics	98
Liberal Studies	114
Education	140
Learning Resources	149

GENERAL INFORMATION

TO NEW STUDENTS

At least part of the information you need in reaching your decision to attend Stout can be found on the following pages. The catalog places primary emphasis on the major programs offered by the University and descriptions of the courses within those programs. Fee, financial aid and housing information is also explained. Other students have found campus visits and discussions with staff members extremely helpful in reaching their decision. If possible, write or call for an appointment to visit the campus. The Admissions office number is 715/232-1232.

THE UNIVERSITY

Stout is one of 13 publicly supported universities in the University of Wisconsin System. It was founded as a private institution in 1893 by James H. Stout. A Menomonee industrialist and a man of great vision, he saw that students in America's developing industrial society needed a different kind of education, an education broader than that offered by the traditional curriculum. Since its founding, Stout has gained a position of national leadership in industrial, vocational, and home eco-

nomics education. Its programs in those fields are among the largest in the world. Although Stout is a career-oriented university, it has had the foresight to make the humanities and social sciences key parts of the total educational program.

THE FACULTY

On most campuses, expertise in teaching is no longer the concern only of the faculty and administration—students are equally concerned. Because Stout has specialized in certain areas, a staff comprised of individuals nationally recognized in their fields has been developed. All classes are taught by the faculty with the exception of several laboratory courses. The student-teacher ratio is about 16-1 overall. Of a staff of 375, a high percentage holds doctorates while others hold special degrees in their fields. One of the fine traditions at Stout has been the faculty's commitment to provide extra help to students.

FACILITIES

The University's instructional programs are supported by some of the most modern and well-equipped facilities to be found anywhere. To keep pace with growing enrollment and the increased needs of education, more than \$15 million in classroom, laboratory and library construction has been completed in the last five years. Sophisticated audio-visual and computer centers serve the entire campus. An open laboratory policy encourages out-of-class study, research and experimentation. The 120-acre campus is adjacent to the central business district and Lake Menomine. Media Retrieval Services (The Robert L. Pierce Library) has a print collection of over 150,000 volumes; nearly 257,000 microforms of various types; subscribes to over 1,848 periodicals; and circulates approximately 108,000 books, films, tapes, microfiche and slides annually.

STUDENTS

In terms of enrollment, Stout is not a local or state school. Its 5,600 students come from every state in the nation and, at last count, 40 foreign countries. Students have a major voice in the affairs of the University and sit on important University committees. Besides regular and informal meetings with students, the University's Chancellor has "an open door policy." More than \$250,000 in student activity funds are administered by student government. There are more than 100 student clubs and organizations on campus, including national fraternities and sororities.

THE COMMUNITY

For many reasons, students like Menomonie and the surrounding area. Lakes, rivers and hills enhance the countryside. The area is in the heart of Wisconsin's vacationland with every winter and summer sport near at hand. Major entertainment and cultural attractions are available on campus and in nearby (60 miles) Minneapolis-St. Paul. Students comprise about a third of Menomonie's 13,000 population.

ADMISSIONS

Application for admission forms may be obtained by writing the Director of Admissions at Stout or from any Wisconsin or Minnesota high school guidance office. Although there are general guidelines, each applicant is considered on an individual basis.

NEW FRESHMEN

High School students should apply for admission early in their senior year. Applications are accepted by the University as early as Oct. 1. There is no deadline for applications. However, because of enrollment limitations, a student who applies early may gain some advantage in admissions and in securing housing and financial aid. High School graduates who rank in the upper three-fourths of their class are admitted in good standing. High school graduates who rank in the lower one-quarter and have an ACT Standard Composite score of 17 or more also are admitted in good standing. (SAT or CQT may be substituted for ACT.) High School graduates who do not meet those requirements are admitted conditionally and are encouraged to carry a lighter load and participate in special programs provided for them. The Director of Admissions has the authority to accept any person who is not a high school graduate if factors indicate an ability to profit from a university education.

Deferred Admission Students who desire to work for a few years or enter military service may process an application for admission now to gain contact with Stout in the event an opportunity for part-time study arises elsewhere. This will enable the student to check on the transferability of course work and, at the same time, keep posted on pertinent changes at Stout.

Ahead (Army Help for Education and Development) Much the same as Deferred Admission, this cooperative program makes it possible for men and women who qualify for active Army service to enroll at Stout at the same time as they enlist in the U.S. Army. While on active duty, Stout continues to serve as an academic counselor and evaluates for college credit the soldier's service training experience. Additional information is available from any U.S. Army recruiter or from the Director of Admissions at Stout.

TRANSFER STUDENTS

Transfer students should apply for admission and forward an official transcript early in the last semester at their present college. Tentative admission can be given after a preliminary evaluation of transfer credits. An early application for admission offers the opportunity for pre-registration for classes and financial aid clearance.

Two Year UW Centers and Accredited Colleges and Universities Normally, students with an overall "C" average at their previous institution(s) can be admitted. Students with less than a "C" average can be admitted under certain circumstances, but should consult with the Director of Admissions for an evaluation. The University of Wisconsin System policy allows a maximum of 72 semester credits to transfer from two year centers.

VOCATIONAL, TECHNICAL AND ADULT EDUCATION INSTITUTES

College Parallel Program Credits for the first two years of college work satisfactorily completed in college parallel programs will normally be accepted at Stout. (In Wisconsin, these are VTAE programs at Madison, Milwaukee and Rhinelander.) Generally, a student may transfer up to one-half the credits required for a degree at Stout, but not more than 72. A student transferring to Stout is expected to complete all program requirements.

Non-College Parallel Program Stout will accept selected credits outside the college parallel program as long as courses involved are part of an Associate Degree program or a direct linkage can be shown between those courses and the student's proposed major area of study at Stout. General education or liberal arts courses taken outside the college parallel program will not usually transfer. However, the student will be given every opportunity to earn credit by examination in those areas. A student transferring from a non-parallel program must complete an application for admission, forward transcripts and furnish a personal reference form to be completed by the Student Services office at the last institution attended.

ADULT SPECIAL STUDENTS OR VETERANS

Adults may be admitted even though they have not completed high school if scholastic ability is indicated through tests and interviews conducted by the University. Those who expect to enter as adult special students should arrange for an interview with the Director of Admissions well in advance of the desired entrance date. There is a special office on campus to assist the entering veteran. For assistance, write to Stout's Veterans Coordinator.

SPECIAL PROGRAMS

Stout offers students opportunities to earn credits outside the classroom as well as in. Certain programs allow students to earn credit by examination. Field Experience and Independent Study should be investigated by students for the purpose of earning credit. These special programs and others are outlined below.

INDEPENDENT STUDIES PROGRAM

Many students at Stout design their own courses for credit through the Independent Studies program. The program is open to all students during any enrollment period. Credits are awarded on the basis of expending approximately 40 hours of effort for each credit. After a topic area for an Independent Study has been selected and approved by an appropriate department chairman, a faculty member is then assigned each student as a learning coordinator to counsel and aid the students in achieving their desired learning objectives. Applications and additional information are available in the Independent Study-Field Experience office.

FIELD EXPERIENCE PROGRAM

Students are encouraged to obtain part of their college education off the Menomone campus through the Field Experience program. This program allows students to receive academic credit for learning related to their major or minor, while employed in an approved off-campus field position. Most students use their summers to enroll in this program, but part-time work is usually permissible. Application forms for enrollment in the program are available in the Independent Study-Field Experience office.

OFFICE OF CONTINUING EDUCATION

Stout offers one of the largest programs in the state in evening and Saturday morning extension classes. Credits may be earned through enrollment in these off-campus courses. They are accepted to Stout on the same basis as they are to other colleges and universities. Registration for these courses is completed at the first class meeting by a representative of the University or by the instructor.

CREDIT BY EXAMINATION

Stout has several procedures which permit students to demonstrate their competence through externally and internally developed examinations. External examinations include the college level examination program (CLEP), the United States Armed Forces Institute (USAFI) and the Advanced Placement program. For additional information on these programs, students should contact Stout's Director of Admissions. Students testing out of a course are usually charged a \$10 fee for the first credit and \$5 for each additional credit. Students taking trade examinations are charged \$25 for up to four credits and \$5 per credit beyond four.

INDUSTRIAL WORK EXPERIENCE

A maximum of 24 semester hours of technical credit may be earned through examination by those students who have completed three years of skilled occupational experiences beyond the learning level of a trade. Students with less than this amount (seven years) of experience may request examination in specific technical courses upon presentation of evidence of appropriate work experience in that area. Students desiring credit for skilled occupational experiences should present evidence of the required amount of work to the program director of Vocational Education (Trade and Industry) shortly after registration to allow special program consideration.

MERRILL-PALMER INSTITUTE

Stout carries an affiliation with The Merrill-Palmer Institute in Detroit, a private institution with a program devoted to study of human development and family services with emphasis on the inner city family. Students in any home economics program may make application to study at Merrill-Palmer through the Dean of Home Economics.

THE FASHION INSTITUTE OF TECHNOLOGY

A semester at the Fashion Institute of Technology provides an opportunity for enriching the fashion merchandising instructional program and widening career horizons. Located at the fashion world's center, this study program in New York City allows intensive exposure to merchandising related activities.

SPECIAL SCHOOLS

Many manufacturers offer specialized, short term, technical courses. Some of these are suitable for University credit. Enrollment in any of these programs (if University credit is desired) must be made through Stout's Office of Continuing Education prior to the beginning of the course.

SUMMER SESSION

Stout conducts a 10-week summer session with classes varying in length from one week to eight weeks. Students may pre-register or register each Monday of the week their classes are scheduled to begin. It is possible to earn 10 credits during the summer session. Graduate students are encouraged to contact the Graduate College early in the spring. The Summer Session Bulletin is available after March 1. A copy will be sent on request. Pre-enrollment is encouraged in April and May.

PIGEON LAKE

The University of Wisconsin System sponsors summer programs at the Pigeon Lake Field Station near Drummond in Bayfield County of northwestern Wisconsin. Station offerings include undergraduate and graduate courses in field biology and in mapping, outdoor education and art. Sessions vary from two to six weeks in length with a variety of biology courses offered on a rotating basis. Credit earned at the Station is accepted as residence credit at Stout. The Field Station is located in a natural outdoor laboratory among the lakes, streams, and forests of relatively unspoiled portions of northern Wisconsin. For additional information, contact Stout's Registrar.

THE GRADUATE COLLEGE

The Graduate College is a distinct administrative unit which offers programs served by the course offerings of the Schools of Industry and Technology, Home Economics, Education and Liberal Studies. Master of Science degrees are offered in the following areas: audio-visual communications, guidance, home economics—clothing and textiles, home economics—food science and nutrition, home economics education, industrial education, industrial technology, marriage and family counseling, safety, vocational education and vocational rehabilitation. A Master of Science in Education degree is offered in school psychology. Education Specialist degrees are offered in industrial and vocational education, and guidance and counseling. For further information, contact: Dean, Graduate College, UW-Stout.

FINANCIAL INFORMATION

Since the catalog must be prepared far in advance, all fees, room and food rates and other charges are subject to change without notice. Students are expected to pay all fees by dates announced at the time of registration. Failure to pay fees may jeopardize subsequent enrollment. Stout offers an opportunity to pay fees in installments. This program now requires 40 percent at the time of registration and the balance in two equal monthly installments. The fees on the following schedule incorporate the usual student costs such as textbook rental. Student Center, student activity and health fees. However, the schedule does not include lab or material fees charged in some courses. The "non-resident" referred to on the schedule is defined as any student who has not been a resident of Wisconsin (or Minnesota) for one year preceding his admission.

SEMESTER COSTS

FRESHMEN-SOPHOMORE			JUNIOR-SENIOR	
Credits	Resident	Non-resident	Resident	Non-resident
1	\$ 19.25	\$ 67.00	\$ 22.25	\$ 80.50
2	42.50	138.00	48.50	165.00
3	65.75	209.00	74.75	249.50
4	89.00	280.00	101.00	334.00
5	114.25	353.00	129.25	420.50
6	138.50	425.00	156.50	506.00
7	162.75	497.00	183.75	591.50
8	187.00	569.00	211.00	677.00
9	212.25	642.00	239.25	763.50
10	236.50	714.00	266.50	849.00
11	260.75	786.00	293.75	934.00
12	287.00	858.50	323.00	1022.00

DORMITORY/FOOD SERVICE—SEMESTER

Double Room	\$295	Base charge
Single Room	\$400	for meals: \$315

MINNESOTA STUDENTS

Under a reciprocity agreement approved by Minnesota and Wisconsin, students from Minnesota can attend public universities in Wisconsin and pay resident tuition rather than non-resident tuition.

SENIOR CITIZENS—ADULT

Wisconsin citizens aged 65 and over may audit all classes at Stout free of charge. Others who do not wish to receive credit for courses taken may also audit courses by paying half of the normal fee

SPECIAL INTEREST—SPLIT PROGRAM STUDENTS

Special interest students and students enrolled in split programs should inquire about the fee structure as it relates to them at the time of registration. Generally, a special interest student is an individual who does not expect to apply the earned credit toward a degree. A split program student is an individual who is enrolled in both graduate and undergraduate courses at the same time.

REFUND ON FEES

Withdrawal refunds are based on the following schedule: First week of classes, 100 percent; second week, 80 percent; third and fourth week, 60 percent. After the fourth week, there is no refund. Refunds for room and food service charges are based on the date of withdrawal.

HOUSING INFORMATION

Residence hall living is a meaningful part of a student's life at Stout. With the help of a professionally trained staff, students achieve their goals through a wide variety of social, educational, and recreational activities. The University provides residence hall accommodations for approximately 2,700 students.

UNIVERSITY REGULATIONS

Freshmen and sophomores (59 credits or less) are required to live in the residence halls. Exceptions are made for veterans, married students, and students living with their parents.

DEPOSITS Residence hall contracts are for the entire academic year. The required housing deposit will reserve a room in one of the residence halls and will be applied against the final payment for the second semester of the academic year. The housing deposit will not be refunded if cancellation is received after July 1. In August, students will be notified of room assignments and check-in dates.

FOOD SERVICE All students residing in the residence halls are required to participate in the University food plan. Students may then take their meals in either of the food service centers or at the Student Center. The plan (called the point system) is a two-part program. The student initially pays an amount to cover fixed costs, plus four coupon booklets. The four booklets represent the number needed by the average student. Students may purchase additional booklets if they require more than the average, or they may receive credit on unused booklets. In this manner, students pay only for those meals they eat and are not penalized for meals missed.

FURNISHINGS Each room is furnished with two single beds and inner-spring mattresses, dressers, student desks, chairs, study lamps, and bookcases. With the exception of self-contained coffee pots and popcorn poppers, cooking equipment is not permitted.

MARRIED STUDENTS At the present time, Stout has approximately 50 married-student units. These are barracks-type units with two bedrooms, a bath, a kitchen alcove, a living room and limited storage space. Married-student facilities are also available in the community.

MOTOR VEHICLES Parking is limited. Registration of all vehicles is required for use of University-owned lots.

INFORMATION Student housing inquiries or requests for additional information should be directed to the University Housing office. Because policy is subject to change without notice, information in the Student or Residence Hall Handbooks and the residence hall contracts more accurately reflect housing and food service policies and fees. See the financial information section for housing and food costs. Contact the University Housing Office for current housing and food costs.

SCHOLASTIC STANDARDS

SEMESTER CREDIT

Credit is expressed in semester hours. A credit of one semester hour represents the satisfactory completion of the work of one recitation a week for a period of one semester. A course having five recitations a week will therefore give five semester hours of credit. In order to receive a degree, the student not only must gain the required number of credits in the course being pursued, but also must attain a certain standard of scholarship.

SUSPENSION AND PROBATION

A 2.0 grade point is needed for graduation. Education programs require 2.25. A lower grade point average at any time, although it may not result in probation or dismissal, cannot be construed as satisfactory progress toward a degree. Minimum acceptable standards for retention are defined as follows:

(1) First semester freshmen students will be placed on probation if they achieve a grade point average less than 1.6 at the end of the semester. They will be suspended if their grade point average is less than .75 at the end of the semester.

(2) Second semester freshmen will be placed on academic probation if their cumulative grade point average at the end of the second semester is less than 1.8. They will be suspended if their grade point average is less than 1.0 for the semester.

A student who has been declared academically ineligible to continue may request a hearing to appeal.

REQUIREMENTS FOR GRADUATION

The semester credit hours required for graduation vary slightly with the major and are stated under the program of study for each major. The normal time required for the completion of these requirements is four years and results in the awarding of the Bachelor of Science or Bachelor of Arts degree. Meeting the requirements for graduation is a responsibility of the student. To fill the minimum residence requirement the last 22 semester hours of credit (64 grade points) must be earned in residence at Stout. Candidates for degrees are required to file an Application for Degree card with the Registrar one semester prior to graduation.

GRADUATION WITH HONORS

In each graduating class, the selection of students for honors is based upon scholarship. A student must have a minimum grade point of 3.2 for Cum Laude, 3.5 for Magna Cum Laude, and 3.8 for Summa Cum Laude. At least 45 semester hours of credit in residence one semester prior to graduation are required to be considered for honors. These honors are indicated on the commencement program and are made a part of the student's permanent record.

TEACHER CERTIFICATION

Teacher education programs at Stout have been established to meet state teacher certification in Wisconsin. Programs likely will meet certification requirements in many if not all other states and countries. However, teacher certifications vary by state (may require state history, etc.) or country, and requirements change periodically. Therefore, a student contemplating teaching in another state or country may wish to clarify the acceptance of the program at Stout by the state or country in which they plan to teach. The Registrar's office on campus may be a resource in this follow-up. The state or national education office of the state involved is also a resource in answering this question.

CREDIT REGISTRATION AND OVERLOAD POLICY

Courses are designed and graduation requirements are established so that a normal semester credit load is 16 or 17 credits. Students should only pre-register or complete final registration for those classes they fully intend to complete. Students may not register for classes which conflict with other class(es).

Undergraduate students with the exception of graduating seniors will be restricted to 18 credits during preregistration. Seniors graduating at the end of the term for which they are registering will be allowed to preregister for a maximum of 20 credits if the additional one-two credits are required to graduate. Once preregistration is completed, students may add credits up to a maximum of 20.

ADD/DROP POLICY

Careful planning should lead to programs for students which are sound individual programs, thus the majority of students should not have a need for adding or dropping once classes start. There may be special reasons which do not permit students to carry through their course plan, therefore the following policy serves as Stout's procedures for adding or dropping classes.

Students who wish to adjust their class schedules may add or drop classes before the end of the second week of semester or quarter classes. Drops made during the first two weeks will not appear on a student's transcript. Students are expected to complete courses for which they register. However, if students deem it necessary to reduce their program after the normal (two week) Add/Drop period, they should do so as early as possible. Drops made during this time period will be shown on a student's transcript with a grade of "W" (withdrawal) recorded. Courses may not be dropped after the mid-point of the term, except for extended serious illness or serious personal emergency. Drops during this period, unless they are the result of illness or extenuating circumstances, will appear on the transcript with a grade of "F".

FALSIFICATION OF RECORDS

Students are expected to provide the University with accurate information concerning their personal and educational history. Students who intentionally falsify information become subject to automatic suspension.

PROCEDURE FOR WITHDRAWAL

Withdrawal should be undertaken only after serious consideration. Persons intending to withdraw must schedule an exit interview at the Student Services office and complete a withdrawal form. A student who fails to withdraw officially from the University will receive a grade of "F" in all courses being pursued.

FINANCIAL AIDS

Stout's Financial Aids office has a variety of programs available to qualified students. Financial aid is awarded according to the student's financial need and academic potential. To assess need, freshmen and transfer students are asked to fill out a Parent's Confidential Statement and the financial aids portion of the admissions application. Continuing students and re-entry students must fill out the Parent's Confidential Statement and the Continuing Student Application for financial aid. All financial aid applicants are also required to apply for the Basic Educational Opportunity Grant. (Separate application forms available from high school counselors and Financial Aids office.) On the basis of these statements the Financial Aids office is able to determine the amount of aid to award.

Financial aid must be applied for annually. Generally, it is awarded for the academic year. Applications submitted by Feb. 15 will be given first priority. However, applications are processed and evaluated after that date, depending upon the availability of funds. Applicants are notified whether or not they are eligible for financial aids between May 1 and June 30.

To be eligible for financial aid a student must be admitted to the University and be at least a half-time (six or more credits) student. If students are eligible and have financial need, they are awarded a financial aid package in which they receive the aid needed in the form of grants, loans, work or a combination.

The following are the various grants, loans and other forms of financial aid available to students at Stout:

BASIC EDUCATIONAL OPPORTUNITY GRANT: The maximum award that can be received under this program is \$1,400, minus the amount that the student and his family can contribute towards the cost of education. Educational costs and the availability of federal funds are also factors in determining the size of the award.

WISCONSIN HIGHER EDUCATION GRANT: A one-year grant for undergraduate Wisconsin residents who have substantial need. An award can be made up to \$1,500 per academic year, based on financial need. Students reapply annually, but freshmen and sophomores receive highest priority.

SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANTS: This grant is available to undergraduate United States citizens or residents of Trust Territories

who are defined under federal regulations as exceptionally needy. This grant has a value of \$200 to \$1,500 per year, not to exceed 50 per cent of student's assessed need and must be matched by other awards.

WISCONSIN NATIVE AMERICAN STUDENT ASSISTANCE GRANTS: The grant is available to American Indians who are Wisconsin residents. It is renewable up to five years to students in good standing at the institution attending. The amount of this grant is up to \$1,500 per academic year and is based on financial need.

BUREAU OF INDIAN AFFAIRS INDIAN GRANT: This grant is available to American Indians. It is renewable up to five years to students in good standing. It is an unspecified amount per academic year based on financial need.

NON-RESIDENT TUITION WAIVER: This remits all or part of non-resident portion of student tuition for a limited number of out-of-state students who show financial need. Scholastic ability is considered. The duration of this waiver is one year.

FOREIGN STUDENT SCHOLARSHIP: This remits all or part of non-resident portion of student tuition for a limited number of full-time foreign students who show financial need. This scholarship is for one year.

MINNESOTA-WISCONSIN RECIPROCITY AGREEMENT: Remits the non-resident portion of student tuition for undergraduate Minnesota residents attending the University of Wisconsin-Stout. Students must reapply each year to Minnesota Higher Education Coordinating Commission, Capital Square, 550 Cedar St., St. Paul, Minn. 55101.

STATE VETERANS EDUCATIONAL GRANTS: This grant reimburses, upon satisfactory completion of courses, cost of fees and textbooks for part-time study. This is unlimited and is available to veterans and unremarried widows and children of qualified deceased veterans.

NATIONAL DIRECT STUDENT LOANS: This loan is available to financially needy students who are United States citizens or residents of Trust Territories. It is interest-free while the student is enrolled on at least a half-time basis with three per cent interest computed annually beginning nine months after student graduates or leaves school. The amount of the loan is up to \$2,500 for undergraduates during the first two years and up to \$5,000 for four years. The repayment period is up to 10 years with up to 100 per cent being cancelled for teachers of handicapped students and teachers employed in schools in low income areas.

WISCONSIN STATE LOANS: Are available to residents of Wisconsin who have a satisfactory academic record and show financial need. The amount of this loan is up to \$2,500 per fiscal year and is interest-free until nine months after graduation or termination of university attendance; thereafter, seven per cent interest is computed annually with a repayment period of up to 10 years.

GUARANTEED LOAN PROGRAM: Is an interest-free loan until after graduation or student leaves school. Thereafter, seven per cent interest is compounded during repayment period of up to 10 years. The loan is in the amount of up to \$2,500 per fiscal year and is available to students with financial need. Applications are obtained from banks and lending institutions.

STATE VETERANS LOAN: Is available to veterans who are Wisconsin residents and show financial need. It is also available to unmarried widows and children of qualified deceased veterans. It is non-renewable and in the amount of up to \$3,000, repayable at three per cent per annum.

COLLEGE WORK-STUDY PROGRAM: Allows up to 40 hours of employment per week with an hourly wage determined by the University. Students must be United States citizens or residents of Trust Territories; in good standing with their institution and show exceptional financial need.

UNIVERSITY STUDENT EMPLOYMENT: Is available to students enrolled at Stout with an hourly wage determined by the department employing the student.

SOCIAL SECURITY: Is available to students up to age 22 whose parents are receiving Social Security. This is in varied amounts up to \$160 per month while the student is enrolled full-time at Stout. Students should contact local Social Security office.

FEDERAL-STATE FUNDS FOR VOCATIONAL REHABILITATION: These funds are available to a handicapped student doing undergraduate study in vocational rehabilitation. Students must apply for financial aids through the Financial Aids office and then contact their district vocational rehabilitation office.

GRADUATE ASSISTANTS: This is available to graduate students for only one year in an amount up to \$2,750 per academic year.

VIET NAM ERA VETERANS EDUCATION GRANT: This grant is available to Wisconsin Viet Nam era veterans in the amount of \$200 per year for a single veteran and \$400 for a married veteran. The grant is renewable for up to four academic years. The student must be a full-time undergraduate and show financial need.

OTHER SOURCES FOR SCHOLARSHIPS: County organizations, family employers, national scholarship awards, local service organizations, local teacher organizations and industrial corporations. Inquiries should be made directly to the organization.

STUDENT SERVICES

Student Services embraces all of the organized efforts, other than classroom instruction, that are designed to make student life an experience which is social as well as individual, and personal as well as intellectual. It attempts to apply education to all areas of living.

STUDENT ACTIVITIES

More than 100 student organizations and activities are represented on campus. They share a common purpose in providing opportunities which will help meet the extracurricular needs of students. Such diverse interests and organizations as band, dramatics, yearbook, newspaper, forensics, chorus, religion, politics, recreation, fraternities and sororities offer experiences which allow students to continually develop their interests. The University also has a complete recreation and intramural program for men and women.

STUDENT CENTER

The Memorial Student Center features lounges, snack bar, bowling, billiards, coffee house, bookstore and a recreation equipment rental center (camping equipment, canoes, bicycles, etc.).

NEW STUDENT ORIENTATION

A summer orientation and registration program provides new freshmen and their parents an opportunity to become better acquainted with the campus. During these scheduled one-day visits, parents become involved in a variety of orientation activities while students are provided with important information about degree programs, career opportunities, and academic advisement in course selection. The students develop the fall semester class schedule.

Transfer and reentry students are also invited to campus during the summer to receive advisement and develop a class schedule.

During the first few days of the fall semester, new students receive additional help through planned activities.

COUNSELING CENTER

Counselors are available to each University student to assist him in deriving the maximum benefit from his university career. Counseling often provides a means to continue growth in self-understanding and in understanding others. Many decisions regarding educational, vocational or peropersonal-social choices can more effectively be made with the help of a counselor. Counseling, psychological testing, and an extensive college catalog and vocational information library are available to all students who desire such assistance. Use of the Center is voluntary and is free of charge to Stout students. The vast majority of students using the services of the Center are experiencing "normal" kinds of concerns. Most students in the course of their college experiences will encounter some problems with which they could benefit from the help of an experienced, understanding person. The Center's hours are 8 a.m. to 4:30 p.m., Monday through Friday. Appointments to see a counselor may be made by calling extension 1211, or by directly contacting the Center.

VETERANS SERVICE

Special assistance is available to veterans by the Office of Veteran's Affairs. This office provides veteran students with current information on veteran's affairs, coordinates special educational programs for veterans, provides a counseling service with a coordinated and extensive referral service, and maintains liaison with the Veterans Administration, Department of Veterans Affairs, and the County Veterans Service Officers.

PLACEMENT SERVICE

The University maintains a full-time Career Planning and Placement Service for all students and alumni. Staff members assist students in evaluating abilities and

planning for the future. In many job areas, the number of open positions on file in the Placement office far exceeds the number of Stout graduates available to fill them.

INTERCOLLEGIATE ATHLETICS

The athletic program contributes to the total educational program of the University. It provides general educational values for the participants and constitutes a laboratory for those who aspire to participate in coaching. Stout is a member of the Wisconsin State University Athletic Conference, the Wisconsin Women's Intercollegiate Athletic Conference, the Midwest Association for Intercollegiate Athletics for Women, the National Association of Intercollegiate Athletics, and the Association for Intercollegiate Athletics for Women.

The University sponsors five women's varsity teams and 11 men's varsity teams. Women's teams include basketball, gymnastics, swimming, track and volleyball. Men's teams are baseball, basketball, cross country, football, golf, gymnastics, hockey, swimming, tennis, track and wrestling. The "S" Club is a campus organization for men and women who have earned letters in intercollegiate sports.

PROGRAMS OF STUDY

Program plans which appear on the following pages should be considered guides to courses and requirements necessary for graduation. Minor changes occur in programs from time to time. These changes are reflected in program guide sheets issued once each year. Entering students must meet the program requirements for graduation listed on the guide sheets, not the requirements listed here, although both will be similar.

SCHOOL OF INDUSTRY AND TECHNOLOGY

Herbert A. Anderson, Ed.D., Dean

Programs:

- Business Administration
- Industrial Education
- Industrial Technology
- Technical Education
- Vocational Education (T&I)

BUSINESS ADMINISTRATION

The four-year curriculum leads to a Bachelor of Science degree with a major in Business Administration. Upon graduation, a student selecting this major would be academically qualified to: operate a small business; secure a position in a large corporate enterprise in fields of sales, finance or management; or attend a graduate school in Business Administration to prepare for a higher-level position in business or industry.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation-----	130 credits (min.)
Required in liberal studies -----	42-45 credits
Required in major studies -----	63-64 credits
Required in concentration-----	15 credits
Electives-----	6-10 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—42-45 credits

Course	Credit
English (326-101 and 102, or 326-111 or 112, plus 326-516) -----	9
Speech (391-100 and 391-508) -----	4
Science (Biology, Chemistry, Physics, or a combination) -----	3-5
General Psychology (479-110) -----	3
Mathematics (355-120 or beyond, plus either an additional four credits of Math beyond initial course or Applied Math 354-xxx, excluding 354- 130) -----	8
Social Science (320-210 and 320-215, plus six additional credits from any two of the following: 338-xxx, 387-110, 303-220 or 375-210) -----	12
Physical Education (367-1xx) -----	1
Arts (Select a two or three credit course from any of the following: 304-xxx, 326-xxx, 360-xxx, 365-201, 365-550, 391-xxx activity type theatre course or 391-232) -----	2-3

MAJOR STUDIES—63-64 credits

Required courses

xxx-xxx, Introduction to Business Administration*-----	1
150-200, Production Management-----	3
160-206 and 160-207, Principles of Accounting -----	6
160-245, Business Data Processing -----	3
160-304, Principles of Business Management-----	3
160-318, Business Law -----	3
320-325, Economics and Business Statistics -----	3
160-330, Principles of Marketing -----	3
160-340, Business Finance -----	3
160-690, Administration and Business Policies-----	3
320-550, Managerial Economics -----	3

*Course under development.

RESTRICTED ELECTIVES—Select three of the following courses:

160-319, Business Law II-----	3
160-335, Managerial Accounting-----	3
160-601, Regulation of Industry-----	3
479-582, Personnel Management-----	3

PROFESSIONAL EMPHASIS—Select a minimum of 14-15 credits from one of the following professional areas of emphasis:

Marketing—160-323 Retail Merchandising and Management; 160-334 Salesmanship and Sales Management; 160-370 Principles of Advertising; 160-679 Marketing Research; 160-x98 Field Experience; xxx-xxx Industrial Marketing*; 214-325 Fashion Merchandising I; 320-470 Economic Model Building and Forecasting; 320-480 Principles of International Trade; and 160-x99 Independent Study.

Personnel/Organization—150-150 Industrial Organization; 150-600 Organizational Leadership; 387-540 Sociology of Work; xxx-xxx Wage and Salary Administration*; 479-581 Industrial Psychology; 320-420 Labor Economics; 479-582 Personnel Management; 160-x98 Field Experience; 479-579 Public Relations; 479-690 Psychological Measurement; and 160-x99 Independent Study.

Accounting/Finance—160-210 Practical Math of Finance; 160-310 Cost Accounting; 160-320 Income Tax Accounting; 160-335 Managerial Accounting; 160-355 Principles of Insurance; 160-x98 Field Experience; xxx-xxx Fundamentals of Investment*; 160-396 Principles of Real Estate; 320-350 Money and Banking; and 160-x99 Independent Study.

*Courses under development.

Business Electives—6 credits

Select an additional six credits from an approved list of Business Administration and related area courses.

Concentration—15 credits required

Select a minimum of 15 credits from any one of the following concentrations: Technology, Home Economics or special.

ELECTIVES—6-10 credits required so as to total a minimum of 130 credits from courses offered at Stout or those approved for transfer.

INDUSTRIAL EDUCATION

The Industrial Education graduate is one of the most sought after individuals in education today. In this field, there have been five teaching positions available for each Stout graduate during the past five years. The primary objective of Industrial Education is to prepare teachers for junior and senior high schools. These teachers may find themselves teaching industrial arts which is a part of general education that offers an insight into the industrial nature of our society. They also frequently teach vocational, trade and industrial programs in the secondary schools by meeting certification requirements.

There are three tracks within the major that students may select in meeting personal objectives. They are American Industry, General Industry and Specialized Technology.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation-----	130 credits
Required in liberal studies-----	51-52 credits
Required in major studies-----	42 credits
Required in professional education-----	22-24 credits
Electives-----	12-15 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—51-52 credits required (all tracks)

Course	Credit
326-101 and 102, Freshman English-----	6
326-xxx, Advanced Writing elective-----	3
391-100, Fundamentals of Speech-----	2
391-xxx, Advanced Speech elective-----	2
355-120 and 121, Introduction to College Mathematics I and II-----	8
479-110, General Psychology-----	3
320-201, General Economics-----	3
338-xxx, History elective-----	3
387-110, Introductory Sociology-----	3
375-210, Government-----	3
311-115, Introductory College Chemistry-----	5
372-221, Mechanics and Electricity-----	5
Science Elective-----	2-3
366-101, Health Survey-----	1
367-1xx, Physical Education elective-----	2

AMERICAN INDUSTRY

American Industry is a new approach to Industrial Arts. It places emphasis on understanding industry through involvement in functions common to all industries such as production, management and marketing. The American Industry curriculum prepares a student to teach American Industry at the junior and senior high school levels. There is an increasing demand for teachers of American Industry both statewide and nationally.

MAJOR STUDIES—42 credits required

150-115, Understanding Industry-----	2
170-101, Processes: Concepts-----	3
130-100, Communications-----	2
600-560, Audio-Visual Communications-----	2
150-223, Relationships-----	2
110-201, Transportation-----	2
150-x98, Field Experience (one summer)-----	2
150-410, Manufacturing Cost Analysis-----	3
170-310, Materials-----	2
150-200, Production Management-----	3
160-330, Principles of Marketing-----	3

150-402, Physical Facilities -----	2
110-101, Energy in Industry -----	2
150-514, Production Systems -----	3
Technical electives -----	9

PROFESSIONAL EDUCATION—22 credits required

421-205A-G, Professional Teacher Education -----	12
190-408, Student Teaching -----	8
421-682, Reading Methods-Secondary School -----	2

ELECTIVES—14-15 Credits required

Select courses offered at Stout or those approved for transfer.

GENERAL INDUSTRY

The purpose in the General Industry track is to provide the students with a broad background in different technologies permitting them to teach multiple areas in high school programs or general shop programs in middle schools or junior high schools.

MAJOR STUDIES—42 credits required

170-101, Processes: Concepts -----	3
110-101, Energy -----	2
130-100, Communications -----	2
150-115, Understanding Industry -----	2
110-103, Power Mechanics -----	2
110-204, Electricity -----	2
130-140, Graphic Arts -----	2
130-110, Drafting -----	2
150-514, Production Systems -----	3
170-205, Design for Industry -----	2
170-270, Light Building Construction -----	2
170-xxx, Processing elective -----	2
Technical electives -----	16

PROFESSIONAL EDUCATION—24 credits required

190-160, Introduction to Industrial Education -----	1
421-303, Educational Psychology -----	2
190-205, Methods of Teaching Industrial Education -----	2
190-404, Curriculum Development -----	5
190-408, Student Teaching -----	8
421-522, Secondary Education Seminar -----	2
413-501, Introduction to Guidance -----	2
421-682, Reading Methods-Secondary School -----	2

ELECTIVES—12-13 credits required

Select courses offered at Stout or those approved for transfer.

SPECIALIZED TECHNOLOGY

A number of options are open to a student who wishes to specialize. Options are: (1) the graphic communications areas of industrial graphics or graphic arts, (2) the

materials processing areas of metals, woods and plastics, and (3) the energy areas of electronics or power technology. During the freshman year, students select a program advisor to assist in preparing a detailed four-year program.

MAJOR STUDIES—42 credits required

Required courses are the same as those in the General Industry track. Technical electives are to be selected to meet the student's professional goals.

PROFESSIONAL EDUCATION—24 credits required

The professional credits are the same as those required in the General Industry track.

ELECTIVES—12-13 credits required

Select courses offered at Stout or those approved for transfer.

VOCATIONAL CERTIFICATION

A student who wishes to become vocationally certifiable must complete the course 469-502 Principles of Vocational, Technical and Adult Education and have a minimum of 2,000 hours of related work experience.

INDUSTRIAL TECHNOLOGY

Stout's Industrial Technology degree is a broadly based program designed to prepare individuals for a variety of responsible industrial positions. Graduates have gained recognition and success in many areas of industry. Typical assignments include: Production and/or construction supervision, quality assurance, packaging, process engineering, methods engineering, systems analysis, production control, cost estimating, purchasing, product design, sales and service, plant engineering, industrial relations, tool design, prototype development, and technical communications.

The program provides for learning experiences to develop competencies in each of four broad areas: knowledge of the characteristics of materials and manufacturing processes; understanding of management principles and their application to industrial problems; awareness of the environmental and sociological implications and those psychological principles which are important in working with, communicating with, motivating, and supervising people; and skill in utilizing the mathematical and physical sciences to understand and solve technological and economic problems found in industry.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation-----	130 credits
Required in liberal studies-----	57-68 credits
Required in major studies-----	62-63 credits
Electives-----	11-19 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—57-68 credits required

Course	Credit
326-101 and 102, Freshman English -----	6
326-xxx, Advanced Writing elective-----	3
391-100, Fundamentals of Speech -----	2
391-xxx, Advanced Speech elective-----	2
367-1xx, Physical Education -----	1
366-101, Health Survey -----	1
479-110, General Psychology or -----	3
479-150, Man: A Course of Study-----	3
<i>Select any two of the following Social Science courses: Introductory Sociology (387-110), Government (375-210), Anthropology (303-220), or History (338-xxx) -----</i>	
	6
320-201 or 320-210, Economics -----	3
355-120, 121 and 153, Mathematics and Calculus I or-----	12
355-156, Calculus and Analytic Geometry I-----	5
354-130, Computational Statistics or -----	2
354-230, Statistical Methods -----	3
354-141, Digital Computer Programming -----	2
311-115, Introductory College Chemistry -----	5
372-221 and 372-223, Mechanics and Electricity and Light and Sound-----	8
<i>Select two-three credits from Humanities and Fine Arts group-----</i>	<i>2-3</i>
<i>Select two-three credits from Environment group -----</i>	<i>2-3</i>
<i>Select four-five credits from Personal Health/Development group -----</i>	<i>4-5</i>

MAJOR STUDIES—62-63 credits required

150-150, Industrial Organization -----	2
150-200, Production Management-----	3
150-500, Engineering Economy -----	3
150-600, Organizational Leadership-----	3
479-582, Personnel Management -----	3
320-420, Labor Economics -----	3
<i>In addition, select one of the following Occupational Safety courses: -----</i>	
	2-3
110-581, Principles of Occupational Safety -----	3
110-583, Voluntary OSHA Compliance-----	2-3
110-584, OSHA Federal Standards & Regulations -----	2
110-585, Contemporary Problems in Occupational Safety-----	3
<i>Technical Foundation Courses: -----</i>	
	3
110-204, Electricity -----	3
130-110, Drafting-----	2
<i>Select four additional technical foundation courses: -----</i>	
	2
110-103, Power Mechanics-----	2
110-260, Introduction to Fluid Power-----	2
130-140, Graphic Arts -----	2
170-202, Metals-----	2
170-250, Plastics I-----	2
170-270, Light Building Construction-----	2
170-280, Packaging Fundamentals -----	2

CONCENTRATION CORE—Select minimum of 20 credits from one of the following concentrations, plus 10 additional professional/technical electives:

BUILDING CONSTRUCTION

- 170-270 Light Building Construction
- 170-370 Commercial Bldg. Construction
- 170-570 Mechanical Systems
- 170-372 Heating & Air Conditioning
- 150-570 Estimating Construction Costs
- 150-670 Construction Management
- 130-221 Architectural Design I
- 130-325 Architectural Design II
- 130-629 Land Use Planning
- 130-527 Topography
- 130-290 Mechanics of Solids I
- 372-325 Strength of Materials

GRAPHIC ARTS

- 130-140 Graphic Arts
- 130-246 Typography
- 130-251 Composition
- 130-355 Line & Halftone Photography
- 130-366 Image Transfer
- 130-370 General Binding
- 130-475 Printing Economics
- 130-557 Color Separation
- 130-543 Graphic Arts Prod. Techniques

ELECTRONICS

- 110-243 Semi-Conductors
- 110-244 Electronic Circuits
- 110-345 Network Analysis
- 355-154 or 156 Calculus
- 355-255 Differential Equations
- Select an additional three courses from the following:*
- 110-248 Electrical Machinery
- 110-256 Digital Computer Systems
- 110-353 Information Theory
- 110-650 Electronic Control Systems
- 110-653 Communication Systems
- 110-656 Pulse & Switching Circuits
- 372-527 Physical Electronics

PACKAGING

- 170-280 Packaging Fundamentals
- 170-315 Packaging Materials
- 170-380 Packaging Systems
- 170-480 Design and Evaluation
- 170-580 Packaging Development
- 170-585 Packaging Seminar
- 304-101 Fundamentals of Design
- 372-325 Strength of Materials or
- 311-541 Chemistry of Materials

MANUFACTURING ENGINEERING

- 150-230 Methods Engineering
- 150-240 Work Measurement
- 150-310 Production Control
- 150-320 Quality Control
- 150-410 Manufacturing Cost Analysis
- 150-510 Production Processing
- 130-290 Mechanics of Solids I
- 130-592 Mechanics of Machinery I

PLANT ENGINEERING

- 150-440 Plant Layout
- 130-325 Architectural Design II
- 150-x97 Field Experience
- 311-553 Environmental Chemistry
- 110-581 Occupational Safety
- 150-450 Maintenance Management
- 372-222 Heat & Thermodynamics
- 372-325 Strength of Materials

PRODUCT DEVELOPMENT

- 130-290 Mechanics of Solids I
- 130-291 Mechanics of Solids II
- 130-592 Mechanics of Machinery I
- 130-593 Mechanics of Machinery II
- 130-532 Mechanical Design
- 130-537 Mechanical Design Drafting
- 130-311 Technical Drafting

TECHNICAL COMMUNICATIONS

- 391-208 Theory of Communications
- 600-560 Audio-Visual Communications
- 600-694 Instructional Comm. Systems
- 130-414 Technical Illustration
- 326-425 Copy Editing & Preparation
- 130-341 Graphic Comm. Processes
- 600-593 TV Production Techniques
- 600-630 Film/Tape Production Fundmtls.

TECHNICAL SALES & SERVICE

- 160-318 Business Law
- 160-330 Principles of Marketing
- 160-334 Salesmanship & Sales Mgmt.
- 160-370 Principles of Advertising
- 150-410 Mfg. Cost Analysis
- 150-320 Quality Control
- 320-215 Principles of Economics II

GENERAL OR SPECIAL

Those students who have identified professional objectives which cannot be met within the established concentration may develop within the curriculum pattern of the degree and in consultation with the program director, a special program to meet the personal interests and needs. The student who cannot or does not wish to select a specific concentration will be placed in a structured, so-called general program.

FIELD EXPERIENCE

Work experience related to the individual's professional goals should be obtained through participation in the Field Experience program. A year-round cooperative education program is also available for selected students. Both programs carry academic credit.

ELECTIVES—11-19 credits required

Candidates for the degree should identify with a specific concentration in Industrial Technology and select their electives to complement objectives of the concentration. In addition, a so-called special program option is available instead of the above concentrations for persons with clearly defined goals.

TECHNICAL EDUCATION

The Technical Education degree program is designed for persons interested in teaching at the technical institute or junior college level.

The growth of the technical programs in post high school institutions has created a need for teachers who have depth of training and experience in a particular technology. The starting salary for post high school teachers is usually higher than for other teaching positions.

The degree requires a serious interest in a technology as well as a strong capability in mathematics and physical science. The student must also be available during summer periods so that the minimum related work experience requirement of 2,000 hours can be met prior to graduation.

Some technical teaching positions require that the teacher serve on a part-time basis in one of the academic areas related to the technology. To teach mathematics or science at a technical institute in Wisconsin on less than half time load, the teacher must have a minimum of 20 credits in the discipline. It is recommended that the prospective technical teacher prepare to teach in mathematics or science.

Program plans are available for two technologies, electronics and mechanical design. These programs are described in detail below. Because there are so many recognized technologies and the need for teachers in certain technologies is limited, formal program plans for special technologies are custom made for the student. The program director for the Technical Education major must be contacted in advance of the school term so a valid degree program in a specific technology can be arranged.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation -----130 credits
 Required in liberal studies ----- 57-59 credits
 Required in major studies ----- 43-47 credits
 Required in professional education ----- 22 credits
 Electives -----7-13 credits
2. Completion of adequate related industrial experience.

PROGRAM REQUIREMENTS

LIBERAL STUDIES—57-59 credits required

Course	Credit
326-101 and 102, Freshman English -----	6
326-xxx, Advanced Writing elective -----	3
391-100, Fundamentals of Speech -----	2
391-xxx, Advanced Speech elective (electronics only) -----	2
355-120 and 121, Mathematics -----	8
355-153 and 154, Calculus (mechanical design 153 only) or -----	8
355-156 and 157, Calculus and Analytic Geometry -----	10
479-110, General Psychology -----	3
338-xxx, History elective -----	3
320-201, General Economics -----	3
375-210, Government -----	3
367-1xx, Physical Education -----	2
366-101, Health Survey -----	1
311-115, Introductory College Chemistry -----	5
372-221, Mechanics and Electricity -----	5
326-xxx, Literature elective (electronics only) -----	3

MAJOR STUDIES—43-47 credits required in either Electronics Concentration or Mechanical Design Concentration.

Electronics Concentration

110-211, Electrical Circuits and Accessories -----	2
110-244, Electronic Circuits -----	3
110-243, Semiconductor Electronics -----	3
110-345, Network Analysis -----	3
<i>Select 15 Credits from the six 110 courses below:</i>	
110-248, Electric Machinery -----	3
110-353, Information Theory -----	3
110-653, Communication Systems I -----	3
110-256, Digital Computer Systems -----	3
110-656, Pulse and Switching Circuit Analysis -----	3
110-650, Electronic Control Systems -----	3
Elective (technical) -----	2
130-110, Drafting -----	2
110-101, Energy in Industry -----	2
170-101, Processes: Concepts -----	3
130-100, Communications -----	2

354-141, Digital Computer Programming	2
355-255, Differential Equations.....	3
372-223, Light and Sound.....	3

Mechanical Design Concentration

130-110, Drafting.....	2
130-311, Technical Drafting	3
130-212, Descriptive Geometry	3
130-290, Mechanics of Solids I	3
130-291, Mechanics of Solids II	3
130-592, Mechanics of Machinery I	3
130-593, Mechanics of Machinery II	3
130-532, Mechanical Design	4
130-433, Tool and Die Design	2
110-204, Electricity	3
354-141, Digital Computer Programming	2
150-150, Industrial Organization	2
170-515, Metallurgy.....	3
170-101, Processes: Concepts	3
354-111, Calculus: Methods and Tools.....	1
170-230, Machine Shop	2
Electives.....	5

PROFESSIONAL EDUCATION—22 Credits required

190-160, Introduction to Industrial Education	1
421-303, Educational Psychology	2
190-205, Methods of Teaching Industrial Education	2
190-404, Curriculum Development	5
190-408, Student Teaching	8
469-502, Principles of Vocational, Technical and Adult Education	2
413-501, Introduction to Guidance	2

ELECTIVES—7-13 credits required

To be selected in consultation with advisor.

VOCATIONAL EDUCATION

(Trade and Industry)

The undergraduate vocational teacher education program in trades and industries is especially designed to prepare a person to teach a trade type occupation to a broad segment of this country's work force. Future auto mechanics, welders, machinists, electricians and others require well prepared teachers to teach the necessary skills and knowledge.

Job opportunities for vocational trade and industrial teachers have been on a constant increase. These opportunities are found in vocational schools, community colleges, private vocational schools and in the training departments of industrial plants.

An individual who has completed an apprenticeship or vocational training program in a trade and has worked as a tradesman makes an ideal candidate for this program.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation ----- 130 credits
 Required in liberal studies ----- 52 credits
 Required in major studies ----- 42 credits
 Required in professional education ----- 26 credits
 Electives ----- 10 credits
2. A student must obtain a minimum of 2,000 hours of appropriate work experience for provision certification to teach vocational, trade and industrial courses. This requirement must also be met before a degree can be granted. (For more details, see program director.)
3. Work experience related to a concentration may be obtained through participation in the Field Experience program.
4. Students qualifying for Advanced Placement, Independent Studies or Honors courses may make appropriate substitutions in the requirements listed.
5. Appropriate education, beyond that required, may be used to substitute for up to two-thirds of the work experience requirement (see program director).
6. Students must make applications for admission to the education sequence. Candidates must hold a cumulative grade point average of at least 2.25 and meet the speech, English and health requirements as described in the Professional Education section of course descriptions.

PROGRAM REQUIREMENTS

LIBERAL STUDIES—52 credits required

Course	Credit
326-101 and 102, Freshman English -----	6
326-xxx, Advanced Writing elective -----	3
391-100, Fundamentals of Speech -----	2
391-xxx, Advanced Speech elective -----	2
355-120 and 121, Introduction to College Math I and II -----	8
479-110, General Psychology -----	3
320-201, Economics -----	3
338-xxx, History elective -----	3
387-110, Sociology -----	3
375-210, Government -----	3
311-115, Introductory College Chemistry -----	5
372-221, Mechanics and Electricity -----	5
Science elective -----	3
366-101, Health Survey -----	1
367-1xx, Physical Education -----	2

MAJOR STUDIES—42 credits required

Because each student brings different qualifications as a result of prior training and experience, the student with the assistance of the program director will define all 42 technical credits in terms of student and job competency needs.

PROFESSIONAL EDUCATION—26 credits required

190-160, Introduction in Industrial Education -----	1
421-303, Educational Psychology -----	2
190-205, Methods of Teaching Industrial Education -----	2
190-404, Curriculum Development -----	5
190-408, Student Teaching -----	8
421-522, Secondary Education Seminar -----	2
413-501, Introduction to Guidance -----	2
469-502, Principles of Vocational, Technical and Adult Education -----	2
469-560, Cooperative Occupational Education Programs -----	2

ELECTIVES—10 credits required

SCHOOL OF HOME ECONOMICS

J. Anthony Samenfink, Ed.D., Dean

Programs:

Child Development and Family Life
 Clothing, Textiles and Design
 Dietetics
 Early Childhood Education
 Fashion Merchandising
 Food Service Administration
 Home Economics in Business
 Home Economics Education
 Hotel and Restaurant Management

CHILD DEVELOPMENT AND FAMILY LIFE

Child Development and Family Life is a four-year (non-teaching) degree program leading to a Bachelor of Science degree. Graduates of this program become qualified for positions in day care centers, child and family service agencies, vocational schools, social welfare programs, recreation programs and family life education. A secondary purpose of the program is to prepare graduates for advanced study in order to fill positions in research, university teaching or professional consultation in child development, family life and related areas.

The primary emphasis of the program is to prepare graduates who will be able to work effectively with groups and individuals of all ages in meeting the needs of children and families.

GENERAL REQUIREMENTS—B.S. DEGREE

Total for graduation-----	113-124 credits
Required in liberal studies -----	46-56 credits
Required in major studies (Child Development or Family Life	
Emphasis -----	67 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—46-56 credits required

Course	Credit
391-100, Fundamentals of Speech	2
326-101 and 102, English or equivalent	6
355-118, Concepts of Mathematics or equivalent	4
365-301, Introduction to Logic and Scientific Methods or equivalent	3
<i>Select 6-12 restricted credits in Science</i>	6-12
479-110, General Psychology or equivalent	3
387-110, Introduction to Sociology or equivalent	3
320-201, General Economics or alternate	3
Select a course in United States History or Government or alternate	3
<i>Select 12-15 credits from at least three of the following areas: art, literature, music, theatre, photography, woodworking, crafts, design, or approved alternative</i>	12-15
Select .5-2 credits in Physical Education5-2

MAJOR STUDIES (Child Development Emphasis)—67 credits required

212-535, Seminar in Self Growth	2
212-124, Child Development I	3
212-264, Child Guidance	2
212-324, Child Development II	3
212-685, Seminar on the Culturally Disadvantaged Child and Family	3
212-250, Family Relationships I	3
212-665, Administration of Early Childhood Education Programs	2
387-530, Sociology of the Community	3
387-420, Child and Family Agencies	2
387-205, Introduction to Social Work	3
413-501, Introduction to Guidance	2
413-675, Counseling Theory	2
212-650, Introduction to Marriage and Family Counseling	3
212-607, Parent Counseling	2
212-xxx, Practicum in Child Development or Field Experience	3
391-206, Discussion	2
212-407, Parent Education	2
242-651, Family Life Education Programs	2
<i>Select at least 13 credits from the following courses:</i>	
212-624, Advanced Child Study	3
212-637, Seminar in Child Development	2
479-251, Child Psychology	3
479-552, Adolescent Psychology	3
212-235, Child Development Laboratory	1
212-265, Child Guidance Laboratory	1
212-541, Home Intervention Programs in Early Childhood Programs	1
387-x99, Independent Studies	1

To complete the program, students must select a minimum of 10 credits from two areas designed to increase the student's competency.

MAJOR STUDIES (Family Life Emphasis)—67 credits required

212-535, Seminar on Self Growth	2
212-250, Family Relationships I	3

387-215, Sociology of the Family-----	3
212-124, Child Development I or alternate-----	3
387-205, Introduction to Social Work-----	3
387-530, Sociology of the Community-----	3
387-420, Child and Family Agencies-----	2
413-501, Introduction to Guidance-----	2
413-675, Counseling Theory-----	2
212-650, Introduction to Marriage and Family Counseling-----	3
212-651, Marriage and Family Counseling Seminar-----	3
212-xxx, Practicum in Family Life or Field Experience-----	3
391-206, Discussion-----	2
212-407, Parent Education-----	2
242-651, Family Life Education Programs-----	2

Select at least 19 credits from family life courses approved by the program director.

To complete the program, students must select a minimum of 10 credits from two areas designed to increase the student's competency.

CLOTHING, TEXTILES AND DESIGN

The Clothing, Textiles and Design program provides an education in fabric and clothing construction and leads to a Bachelor of Science degree. The four-year program is designed to develop competencies in clothing construction and an understanding of fabric characteristics, manufacturing and design. In addition to an in-depth clothing and textile concentration, students are given a cluster of general educational experiences and are required to minor in one of several areas.

Career opportunities for a graduate in the Clothing, Textiles and Design program include: sales or department management, fabric store supervision, technical-vocational teaching, new products evaluation, extension service, public relations, technical sales, fabric coordination and journalism.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation-----	128 credits
Required in liberal studies-----	41 credits
Required in major-----	40-44 credits
Electives-----	43-47 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—41 credits required

Course	Credit
304-101, Fundamentals of Design-----	3
311-115 or 311-135, Chemistry-----	5
326-101 or 326-111, English-----	3
326-102 or 326-112, English-----	3
355-xxx, Mathematics elective-----	4
367-xxx, Physical Education elective-----	2
387-110 or 303-220, Introductory Sociology or Cultural Anthropology-----	3

391-100, Fundamentals of Speech	2
479-110, General Psychology	3
Electives (not included in emphasis)	13

MAJOR STUDIES—40-44 credits required

Emphasis in:

- A. Textile Technology
- B. Apparel Construction
- C. Avocational Interests
- D. Journalism
- E. Textile Promotion and Communication
- F. Business Administration

PROGRAM EMPHASIS

- The student may choose one of the following alternatives:
 - Select 44 credits within emphasis A, B, or C.
 - Select 22 credits from two emphases A, B, or C.
 - Select 22 credits within emphasis A, B, or C and 18 credits within emphasis D, E, or F.
- Credit for a course appearing in two emphases cannot be applied in both emphases.
- Each student is required to carry a minor in the area of his interest. For a minor in Business Administration, Journalism, Speech, Chemistry, Art or Sociology, consult the department chairman in the corresponding department.

For certification in vocational education, consult the program director for Vocational, Trade and Industry.

ELECTIVES—43-47 credits required

DIETETICS

This program will provide the academic background for a career as a therapeutic dietitian, administrative dietitian or nutrition educator. In a 1971 listing of occupations where shortages exist, the field of Dietetics ranked fourth.

The dietetic student receives an education with equal emphasis on the following sciences: physical and biological; behavioral and social; communication and professional. With this balance, the student can move toward the more technical or the more general areas of Dietetics.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation	128 credits
Required in liberal studies	54 credits
Required in major studies	58-65 credits
Electives	13-19 credits

2. The student must fulfill the English adequacy and speech proficiency requirements prescribed by those departments.
3. Work experience may be obtained through participation in the Field Experience program.
4. To be admitted to candidacy in Dietetics a grade of "C" (2.00) is required in the following courses: 229-212, 229-240, 308-132 and 311-201; a cumulative grade point average of "C" (2.00) in 326-102, 391-100, 387-110, and 479-110.

PROGRAM REQUIREMENTS

LIBERAL STUDIES—54 credits required

Course	Credit
311-115, Introductory College Chemistry -----	5
320-201, General Economics-----	3
326-101, Freshman English: Composition-----	3
326-102, Freshman English: Reading and Related Writing-----	3
326-xxx, Writing elective-----	3
366-xxx or 367-1xx, Physical Education elective-----	2
387-110, Introductory Sociology-----	3
391-100, Fundamentals of Speech-----	2
421-303, Educational Psychology-----	2
242-201, Teaching Techniques in Home Economics-----	2
479-110, General Psychology-----	3
479-582, Personnel Management-----	3

Select five credits from the following areas: Biology, Chemistry, Geography, Physics or 214-140, Textiles I.

Select 15 credits from five of the following areas: Child Development and Family Life, Anthropology, Art, Literature, Foreign Language, History, Music, Philosophy, Political Science, Theatre (excluding Stagecraft) or 214-617, Social Psychological Aspects of Clothing.

MAJOR STUDIES—58-65 credits required

229-101, Dietetics as a Profession-----	1
229-212, Nutrition-----	3
229-240, Food Science-----	4
229-410, Advanced Nutrition-----	3
229-318, Meal Management Practicum-----	2
229-618, Diet Therapy-----	3
245-501, Food Service Administration-----	3
245-211, Quantity Food Production-----	3
245-222, Institutional Food Purchasing-----	2
308-132, Physiology and Anatomy-----	4
308-306, General Microbiology-----	4
311-201, Organic Chemistry Lecture-----	3
311-203, Organic Chemistry Lab-----	1
311-511, Biochemistry-----	3
354-130, Computational Statistics or-----	2
354-230, Statistical Methods-----	3
229-638, Experimental Foods or-----	3
229-661, Social and Cultural Aspects of Food-----	2
600-560, Audio-Visual Communications-----	2

Select either:

xxx-xxx, Mathematics (three years of high school) or -----	0
355-xxx, Mathematics elective -----	4

Select one of the following courses:

160-206, Principles of Accounting or -----	3
160-245, Business Data Processing or -----	3
354-140, Computer Concepts -----	2

Select five credits from the following courses:

150-150, Industrial Organization -----	2
150-530, Human Factors Engineering -----	3
229-xxx, Any Advanced Nutrition course -----	3
229-205, Nutrition for Weight Control -----	2
229-220, Outdoor Cooking -----	1
229-260, Menu Planning and Design -----	2
229-608, Advanced Meal Management Practicum -----	2
229-514, Food and Industry -----	2
229-606, Nutrition Education -----	2
229-633, Maternal and Child Nutrition -----	3
245-123, Essentials of Hospitality Service -----	1
245-312, Restaurant Operational Management -----	3
245-371, Food, Beverage and Labor Cost Controls -----	2
245-521, Food Service Equipment -----	2
245-602, The Extended Role of School Food Service -----	1
245-656, Microwave Oven -----	2

Select six credits from either Sociology or Psychology or from the following three courses in Economics: 320-210, 320-215 or 320-420.

ELECTIVES—13-19 credits required

Completion of electives may be met by a minor; two concentrations of at least 15 credits each; or by selecting freely from any course work offered by the University.

EARLY CHILDHOOD EDUCATION

The Early Childhood Education program prepares persons to teach in kindergartens, nursery schools, or day care centers; to work in child and family service agencies or governmental programs; and/or to enter graduate study in Early Childhood Education, Child Development and Family Life, or other related fields.

Graduates of Stout's Early Childhood Education program become certified for nursery-kindergarten (N-K) in Wisconsin and nursery through grade three in some other states.

UW-Stout has a cooperative Elementary Education program with UW-Eau Claire.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation -----135 credits
Required in liberal studies ----- 49 credits
Required in major studies ----- 86-87 credits
2. To qualify for admission into the Level B courses in the program, the student must have received a "C" or better in all Level A courses and be recom-

mended by instructors in Level A courses. In order to be recommended for certification, the student must have received a "C" or better in all Level B courses.

3. Upon entrance to 212-408A Student Teaching in Early Childhood Centers, students must have on file a current physical health examination certificate.
4. Students in Early Childhood Education must demonstrate English composition and speech proficiency by obtaining a "C" or better in English 102 or its equivalent (or achieve a proficiency rating on an English proficiency test), and pass a speech proficiency test before they become certified for teaching.

PROGRAM REQUIREMENTS

LIBERAL STUDIES—49 credits required

Course	Credit
326-101, English	3
326-102, English	3
326-xxx, English elective	3
355-118 or 355-120, Mathematics or equivalent	4
375-210, Government	3
367-1xx, Physical Education elective	1
391-100, Fundamentals of Speech	2
479-110, General Psychology	3
<i>Select 10 credits from among two or more of the following areas: Art, Language, Music, Philosophy, Speech or Theatre.</i>	
<i>Select eight credits from among the following areas: Biology, Chemistry, or Physics.</i>	
<i>Select nine credits from among the following areas: Anthropology, Economics, Geography, History, Political Science and Sociology.</i>	

MAJOR STUDIES—86-87 credits required

Level A	
212-100, Introduction to Early Childhood Programs	1
212-130, Development of the Young Child I	3
212-230, Development of the Young Child II	3
212-264, Child Guidance	2
212-265, Child Guidance Laboratory	1
366-340, Standard First Aid and Personal Safety	2
229-136, Food for Young Children	1
360-134, Rudiments of Music	1
360-200, Applied Music	1
212-204, Introduction to Teaching Early Childhood Education	4
212-342, Creative Activities for Young Children	3
367-265, Physical Activities for Pre-School Children	2
600-560, Audio-Visual Communications	2
Level B	
212-685, Seminar on the Culturally Disadvantaged Child and Family	3
479-251, Child Psychology	3
212-420, Theories of Early Childhood Education	2
479-530, Psychology of Learning or	3
421-303, Educational Psychology	2
326-300, Children's Literature	3

212-408a, Student Teaching Early Childhood Centers	4
212-408b, Student Teaching Kindergarten	4
212-409, Clinical Seminar in Child Development Programs5
212-411, Clinical Seminar in Kindergarten Education5
212-303, Curriculum I	2
212-333, Curriculum II	2
212-433, Reading in Early Childhood Education	3
479-562, Psychology of the Exceptional Child	2
212-407, Parent Education	2
212-665, Administration of Early Childhood Education Programs	2
<i>Select 24 additional credits relating to major or complete two specializations outlined by program director. Credits for UW-Eau Claire Elementary Education program may apply toward these 24 credits.</i>	

FASHION MERCHANDISING

The four-year Fashion Merchandising program focuses on fashion and business administration. Under the objectives of the program, the student develops an understanding of the fashion field, an appreciation of fashion and fashion design, and a broad knowledge of fabrics; obtains a business background in marketing, sales, merchandising, management and advertising; and acquires a broad educational background in science, mathematics, social science, art, English and communication. In addition to a major in Fashion Merchandising, the degree carries a minor in Business Administration.

Included in the list of Fashion Merchandising career possibilities are: fashion coordinator; buyer; training manager; divisional merchandising manager; youth fashion coordinator; sales manager; stock controller; store manager and resident buyer.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation	128 credits
Required in liberal studies	25 credits
Required in major	61-62 credits
Restricted electives	25-26 credits
Electives	15-17 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—25 credits required

Course	Credit
304-101, Fundamentals of Design	3
320-210, Principles of Economics I	3
320-215, Principles of Economics II	3
326-101, Freshman English: Composition	3
326-102, Freshman English: Reading and Related Writing	3
367-1xx, Physical Education elective	2
387-110, Introductory Sociology	3
391-100, Fundamentals of Speech	2
479-110, General Psychology	3

MAJOR STUDIES—61-62 credits required

214-430, Merchandising Planning and Control	2
214-110, Male-Female Apparel	1
214-120, Introduction to Fashion Merchandising	2
214-140, Textiles	3
214-225, Clothing and Textile Industry	3
214-298, Fashion Merchandising - Field Experience	2
214-319, Economics of Clothing	3
214-325, Fashion Merchandising I	3
214-429, Textile Economics	2
214-329, Fashion Merchandise Promotion	2
214-426, Fashion Merchandising Practicum	3
214-610, History of Costume: Ancient to European 1900 or	3
214-611, History of American Costume	2
214-617, Social Psychological Aspects of Clothing	3
245-360, Consumer Economics	3
160-206, Principles of Accounting	3
160-207, Principles of Accounting	3
160-304, Principles of Business Management	3
160-330, Principles of Marketing	3
160-334, Salesmanship and Sales Management	3
160-323, Retail Merchandising and Management	3
160-370, Principles of Advertising	3
160-xxx, Business electives	3
479-582, Personnel Management	3

RESTRICTED ELECTIVES—25-26 credits required

Electives must be selected from each of the following areas: Writing (3 cr.); Art (3 cr.); Literature (3 cr.); History or Political Science (3 cr.); Mathematics (4 cr.); Music, Philosophy, Theatre or Foreign Language (4-5 cr.); Biology, Chemistry or Physics (5 cr.).

ELECTIVES—15-17 credits required

From courses offered at Stout or those approved for transfer. A semester in New York City's Fashion Institute of Technology is an option available to students in this program.

FOOD SERVICE ADMINISTRATION

The program in Food Service Administration provides the academic background for a career as an administrator in large quantity food production and service facilities. Areas in which a food service administrator would be concerned with serving nutritional diets to large groups of people (100 or more) are: industrial feeding; airline feeding; school food service; university food service; nursing home and hospital food service; day care and geriatric centers; fast food service; commissary food production; vending food operation; and supermarket management.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation -----128 credits
 Required in liberal studies -----68 credits
 Required in major studies -----45 credits
 Electives -----15 credits
2. The student must fulfill the English adequacy and speech proficiency requirements prescribed by the respective departments.
3. Work experience must be obtained through participation in the Field Experience program.
4. Students must attain a grade of "C" or better in each of the courses within the Liberal Studies. Students must maintain a 2.5 grade point average within Major Studies. Students will have until the second semester of their junior year to attain the 2.5 average.

PROGRAM REQUIREMENTS

LIBERAL STUDIES—68 credits required

Course	Credit
391-100, Fundamentals of Speech and Speech Proficiency Exam* -----	2
391-206, Discussion -----	2
391-208, Theory of Communication -----	3
391-204, Techniques of Group Leadership -----	2
391-512, Speech Skills for Educators -----	2
329-103, Elementary Spanish -----	4
329-104, Elementary Spanish -----	4
326-101, Freshman English: Composition* -----	3
326-102, Freshman English: Reading and Related Writing* -----	3
326-546, Research Reporting* or -----	2
326-515, Technical Writing for Home Economics* -----	3
355-123, Finite Mathematics with Applications* or -----	4
xxx-xxx, Three years of high school mathematics* -----	0
421-303, Educational Psychology -----	2
242-201, Teaching Techniques in Home Economics* or -----	2
421-205, Professional Teacher Education Seminar* -----	2
242-240, Clinical Experience in Micro-Teaching -----	1
242-341, Clinical Experience in Schools -----	1
242-241, Clinical Experience in the Community -----	1
600-560, Audio-Visual Communications* -----	2
354-140, Concepts of Computer* -----	2
<i>Select nine credits from three different areas of the following:*</i>	
304-xxx, Any Art course	
326-xxx, Any Literature course	
360-xxx, Any Music course, except 360-090, Stage Band	
365-xxx, Any Philosophy course, except 365-301, Logic	
391-232, Introduction to Theatre or 391-334, Contemporary Theatre	
600-535, Film: History and Appreciation	
212-xxx, Any Human Development and Family Living course	
387-110, Introductory Sociology* -----	3
214-617, Social-Psychological Aspects of Clothing -----	3

303-220, Introduction to Cultural Anthropology*	3
479-110, General Psychology *	3
338-xxx, Any History course	3
320-210, Principles of Economics I*	3
320-215, Principles of Economics II *	3
320-420, Labor Economics*	3
375-210, Government or *	3
375-310, Political Parties and Pressure Groups* or	3
375-320, Civil Liberties in the United States *	3
311-115, Introductory College Chemistry* or	5
311-135, College Chemistry I*	5
311-201, Organic Chemistry Lecture*	3
311-203, Organic Chemistry Lab*	1
308-306, General Microbiology*	4
308-132, Physiology and Anatomy*	4
229-212, Nutrition* (*)	3

*Required Courses

(*) 311-201, Organic Chemistry and 308-132, Physiology and Anatomy, prerequisites

MAJOR STUDIES—45 credits required

229-240, Food Science* (*)	4
245-211, Quantity Food Production*	3
245-513, Quantity Food Production and Service*	3
229-661, Social and Cultural Aspects of Food*	2
229-318, Meal Management* or	2
245-312, Restaurant Operational Management*	3
354-130, Computational Statistics* or	2
354-230, Statistical Methods*	3
110-581, Principles of Occupational Safety	3
214-545, Textiles for Institutions	2
229-220, Outdoor Cooking	1
229-260, Menu Planning and Design*	2
229-514, Food and Industry	2
245-x98, Field Experience*	2
245-123, Essentials of Hospitality Service	1
245-222, Institutional Food Purchasing*	2
245-371, Food, Beverage and Labor Cost Controls*	2
245-501, Food Service Administration*	3
245-521, Food Service Equipment*	2
245-656, Microwave Oven*	2
160-206, Principles of Accounting I*	3
160-207, Principles of Accounting II*	3
160-318, Business Law	3
160-330, Principles of Marketing	3
160-304, Principles of Business Management*	3
479-582, Personnel Management*	3
366-340, Standard First Aid and Personal Safety*	2

*Required Courses

(*) 311-201, Organic Chemistry, prerequisite

ELECTIVES—15 credits required

From courses offered at Stout or those approved for transfer.

HOME ECONOMICS IN BUSINESS

The Home Economics in Business major is a four-year program leading to a Bachelor of Science degree. The general objective of this major is to develop competencies which will enable a person to function effectively as a member of a business organization. This task is accomplished through four general areas of study: (1) Liberal studies provides broad learning experiences in art, science, English, mathematics and the behavioral sciences. (2) Major required courses develop a background in business and communications. This area also allows students, through restricted electives, to gain a broad exposure to Home Economics in Business through courses not included in their chosen emphasis area(s). (3) Emphasis areas—students may select from one of eight emphasis areas, taking at least the required minimum credit. Foods II, Journalism and Sales Promotion must be taken along with one other area of emphasis, however. (4) Electives—7-38 free electives depending on the number of hours required or selected in emphasis areas. These electives are used to expand knowledge in an area of interest, explore selected disciplines or to complete a minor. A minor (22 credits) is suggested in journalism, business administration or speech.

The Home Economics in Business major prepares individuals for various careers in business and public service. Included are: public relations, banking and finance, sales, business management, food processing, home equipment manufacturing, journalism and interior decoration.

GENERAL REQUIREMENTS—B.S. DEGREE

Total for graduation	-----128 credits
Required in liberal studies	-----57-63 credits
Required in major studies (depending on emphasis)	-----33-58 credits
Electives	-----7-38 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES —57-63 credits required

Course	Credit
391-100, Fundamentals of Speech	2
326-101 or 326-111, Freshman English: Composition	3
326-102 or 326-112, Freshman English: Reading and Related Writing	3
366-xxx or 367-xxx, Any Physical Education course	2
<i>In consultation with advisor, select courses related to:</i>	
Utilization of oral symbols	5-7
Utilization of written symbols	3
Utilization of numerical symbols	4-6
Understanding the psychological/sociological nature of man	3
Understanding the economic aspects of the American business/industrial system	3-4
Understanding the management organization aspects of business/industry	9-10
Understanding man's inherent physical nature and/or his environment	3-4
Understanding the creative/rational aspects of man	9
Understanding and appreciating the historic/socio-cultural/political aspects of man	6
<i>Select one of the following:</i>	
365-301, Introduction to Logical Thinking and Scientific Methodology	3
500-555, Solving Problems	2

MAJOR STUDIES—Courses will be selected according to emphasis(es) chosen.

EMPHASIS BLOCKS—33-58 credits required

To complete the program, a student selects an emphasis of interest. Foods II, Journalism and Sales Promotion must be taken with another emphasis block, however.

Foods I—33-35 credits

Foods II—19-22 credits

Equipment—34-35 credits

Consumerism—50-58 credits

Banking and Finance—40-45 credits

Interior Decorating—38-46 credits

Journalism—22-24 credits

Sales Promotion—33-42 credits

ELECTIVES—7-38 credits required

HOME ECONOMICS EDUCATION

Although work in Home Economics Education opens many job opportunities, the greatest number of positions available to graduates with a Bachelor of Science degree in Home Economics Education are in secondary education, extension education and curricula development in business and industry.

Home economics at the elementary, secondary and post secondary level has been changing and will continue to change. One of the most apparent changes in the public schools is the offering of semester courses in substantive areas rather than integrated generalized offerings. Home economics teachers must be prepared to teach all areas in a one-teacher department, but the multi-teacher departments allow specialization. The number of single teacher home economics departments is decreasing and the number of multi-teacher departments increasing. These and other changes are reflected in program specializations and modifications.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation-----130 credits
Required in liberal studies-----44 credits
Required in major studies-----48 credits
Required in professional education-----24-27 credits
Electives -----14 credits
2. There are four planning systems which encourage individualized education and allow for maximum flexibility within the guidelines for a certifiable program of 130 credits. When planning the sequence of experiences leading to the Bachelor of Science degree with a major in Home Economics Education, the student should select and organize the classes within one of four planning systems. Depending on the program selected by the student, elective credits can be used to obtain a minor (22 credits) or specialized study (specialization 10-18 credits) within a certain area. A combination of a minor and a specialization is also possible.

3. Specializations:

APPAREL, TEXTILES AND DESIGN—Preparation for teaching semester or occupation-oriented courses at secondary and post-secondary levels.

FAMILY LIFE AND CHILD DEVELOPMENT—Preparation for teaching specialized courses at elementary, middle, secondary, and post-secondary levels. Fulfills one of the greatest contemporary needs in education. Opportunities open for both men and women.

FOOD SERVICE AND NUTRITION—Popular with both men and women. Preparation for teaching semester or occupational-oriented courses at secondary and post-secondary levels.

HABITAT, EQUIPMENT AND MANAGEMENT—Preparation of men and women to teach semester courses or become employed in business and industry. Leads to further graduate work.

OCCUPATIONAL-ORIENTED EDUCATION—Preparation of men and women to teach occupation-oriented programs in secondary and post-secondary schools.

CONSUMER EDUCATION—Preparation for teaching semester courses and gives greater depth in teaching a comprehensive program.

EXTENSION AND COMMUNITY SERVICES—Preparation for employment in cooperative extension education and teaching in varied community programs.

MIDDLE SCHOOL—Certifiable program for teaching Home Economics in the middle school.

SLOW LEARNER—Certifiable program for education of the slow learner in Home Economics.

REHABILITATION—Provides opportunities of employment for teaching Home Economics to the handicapped.

INSTRUCTIONAL MEDIA—Provides in-depth study for use in educational settings of Home Economics. Certifiable as an audio-visual coordinator-media specialist in a single school within a system in Wisconsin.

AVOCATIONAL INTERESTS—Preparation for employment in schools, community programs, craft schools, workshops, campus, hospitals, special projects for the aged and other interest groups related to Home Economics knowledge and skills.

HEALTH RELATED OCCUPATIONS—Preparation for men and women to teach occupation oriented programs in secondary or post high school programs.

COOPERATIVE DISTRIBUTIVE EDUCATION—Provides an opportunity for team teaching, wage earning oriented programs with Distributive Education.

GUIDANCE AND CAREER DEVELOPMENT—Provides teachers wider employment opportunities in working with Career Development either at secondary level or as an elementary consultant.

4. To qualify for student teaching, the candidate must fulfill the English adequacy and speech proficiency requirements and have a cumulative grade point average of 2.25.

PROGRAM REQUIREMENTS

LIBERAL STUDIES—44 credits required

Course	Credit
304-xxx, Art elective -----	3
308-132, Physiology and Anatomy -----	4
311-115, Introductory College Chemistry or -----	5
311-135, College Chemistry I -----	5
320-201, General Economics -----	3
326-101 or 326-111, Freshman English -----	3
326-102 or 326-112, Freshman English -----	3
326-xxx, English elective -----	3
367-1xx, Physical Education elective -----	2
387-110, Introductory Sociology or -----	3
303-220, Cultural Anthropology -----	3
391-100, Fundamentals of Speech -----	2
479-110, General Psychology -----	3
Select any three-credit course in History or Government -----	3
Liberal Studies electives -----	7

MAJOR STUDIES—48 credits required

212-264, Child Guidance -----	2
212-124, Child Development I -----	3
212-250, Family Relationships I -----	3
214-110, Male-Female Apparel -----	1
212-xxx, Family Life elective -----	1
214-140, Textiles I -----	3
214-266, Apparel Construction -----	3
214-xxx, Clothing elective -----	2
229-124, Foods -----	4
229-212, Nutrition -----	3
229-318, Meal Management Practicum -----	2
245-275, Management of Family Resources -----	3
245-250, Family Housing -----	3
245-360, Consumer Economics -----	3
Major Studies electives (minimum) -----	12

PROFESSIONAL EDUCATION—24-27 credits required

242-241, Clinical Experience in the Community -----	1
242-101, Experimental Learning in Home Economics -----	1
242-201, Teaching Techniques in Home Economics -----	2
242-240, Clinical Experiences in Micro-Teaching or -----	1
242-341, Clinical Experiences in Schools -----	1
242-301, Home Economics Curriculum -----	3
242-443, Clinical Seminar in Home Economics Education -----	2
242-444, Practicum in Teaching Home Economics or -----	6
242-488, Intern Teaching in Home Economics -----	8
421-522, Secondary Education Seminar -----	2
413-501, Introduction to Guidance or -----	2
421-590, Mental Health in Schools -----	2
421-303, Educational Psychology or -----	2
479-530, Psychology of Learning -----	3
421-682, Reading Methods-Secondary School -----	2

ELECTIVES—14 credits required

From courses offered at Stout or those approved for transfer.

HOME ECONOMICS GENERAL

This program provides an opportunity to become involved in issues facing society. It is often used as a base of entry to a specialized area. Home Economics General is not a four-year program; the primary purpose of this program is to provide a temporary major for home economics students until they choose a permanent major in home economics. Students should choose a specific major in home economics before beginning their junior year.

HOTEL AND RESTAURANT MANAGEMENT

Hotel and Restaurant Management is one of America's fastest growing fields. Each year, the amount of leisure time increases for thousands of Americans and, with that increase, comes a growing demand on the hospitality industry. As existing lodging and dining facilities expand, new businesses are being started to accommodate more and more people who want new and better service.

Stout's specialized mission enables Hotel and Restaurant Management majors to receive a variety of training. Curriculum is structured to allow a considerable amount of practical training, giving students specific skills needed to successful careers. It also provides studies in the liberal arts areas to give graduates a flexible background, enabling them to adapt for a wide variety of situations in today's rapidly changing society.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation ----- Variable
Required in liberal studies ----- 43-49 credits
Required in major studies ----- 74 credits
2. The Hotel and Restaurant Management program emphasizes competency in task achievement. The required courses generally provide these professional competencies. Achievement of the designated tasks will result in the awarding of the Bachelor of Science degree. The total number of actual earned credits may vary with each graduate depending upon the individual student's program selections. For the student with specialized education or industry experience in specific course areas, credits may be awarded through established task competency examination procedures. The usual range of earned credits for the degree is from 116 to 135 credits.
3. The student must fulfill the English adequacy and speech proficiency requirements prescribed by the respective departments.
4. All students are required to work a total of two 12-week periods, 40 hours a week, in approved jobs during the summer months or the academic year. The student must write a report on his work experience and a letter from the in-

dustry supervisor detailing work performance for a 12-week period is required. Both summers must be spent in the Field Experience program. Prior industry experience may be used to fulfill this requirement.

PROGRAM REQUIREMENTS

LIBERAL STUDIES—49-50 credits required

Course	Credit
326-101, Freshman English: Composition -----	3
326-102, Freshman English: Reading and Related Writing -----	3
326-xxx, Writing electives -----	5-6
355-xxx, Mathematics elective -----	4
391-100, Fundamentals of Speech -----	2
391-xxx, Speech elective -----	2
<i>Select 30 credits from the following areas: Philosophy or Psychology (5 cr. min.); Science (3 cr. min.); Economics, Political Science, Anthropology, or Sociology (6 cr. min.); Art Survey or Art History, History, Music, Literature, or Theater (5 cr. min.); Electives other than above areas (3 cr. min.).</i>	

MAJOR STUDIES—43-49 credits required

130-180, Hospitality, Living and Institutional Facilities Planning -----	2
229-124, Foods -----	4
245-123, Essentials in Hospitality Service -----	1
245-140, Introduction to Hospitality and Food Service Industry Management -----	3
245-211, Quantity Food Production -----	3
245-222, Institutional Food Purchasing -----	2
245-240, Introduction to Tourism and the Travel Industry -----	2
245-300, Hospitality Organization Management -----	3
245-312, Restaurant Operational Management -----	3
245-370, Hotel and Restaurant Accounting -----	3
245-371, Food, Beverage and Labor Cost Control -----	2
245-x97, Preliminary Field Experience or -----	1
xxx-xxx, Prior Work Experience in the Hospitality Industry -----	
245-245, Marketing for the Hospitality Industry -----	1
245-625, Hospitality Industry Law and Liability -----	2
245-x98, Advance Field Experience or -----	2
xxx-xxx, Prior Supervisory or Management Experience in the Hospitality Industries -----	
245-626, Employee and Labor Relations in the Hospitality Industry or -----	2
320-420, Labor Economics -----	3
160-206, Principles of Accounting -----	3
160-318, Business Law -----	3
354-140, Computer Concepts or -----	2
160-245, Business Data Processing or -----	3
354-141, Digital Computer Programming -----	2
479-581, Industrial Psychology or -----	2
479-582, Personnel Management -----	3
<i>Emphasis Areas—Students must complete the required courses in at least two of the following emphases, along with the minimum elective requirements in those emphases.</i>	

LODGING MANAGEMENT EMPHASIS—required courses: Housekeeping Management; Front Office Operations; Lodging, Group and Convention Sales; Bar

Management; Hospitality Industry Financial Analysis and Budgeting; and Integrated Management Systems for Hospitality Industries.

RESTAURANT MANAGEMENT EMPHASIS—required courses: Haute Cuisine; Bar Management; Food and Beverage Sales; Food Service Equipment; Hospitality Industry Financial Analysis and Budgeting; and Integrated Management Systems for Hospitality Industries.

SALES EMPHASIS—required courses; Lodging Group and Convention Sales; Food and Beverage Sales; Bar Management; Tourism Attractions and Destination Development; Hospitality Industry Financial Analysis and Budgeting; and Integrated Management Systems for Hospitality Industries.

TOURISM EMPHASIS—required courses: Tourism Attractions and Destination Development; Role of Tourism Oriented Products (TOP in Movement and Expansion of the Industry); Entrepreneurial and Governmental Organization/Marketing Concepts of Tourism; and Sociology of Tourism Phenomenon.

GENERAL HOSPITALITY EMPHASIS: This emphasis permits the student with a particular career orientation not covered by the other emphases to construct an individually designed emphasis through consultation with the program director. Determination of credits to be awarded for industry experience under this emphasis will be made by a committee composed of the program director, two faculty members and two industry representatives with specialized knowledge in the area to be evaluated.

SCHOOL OF LIBERAL STUDIES

Dwight L. Agnew, Ph.D., Dean

Programs:

- Applied Mathematics
- Art
- Art Education
- Marketing and Distributive Education

APPLIED MATHEMATICS

The role of mathematics in our modern scientific-technological society is basic and essential. Mathematical thought and modeling are recognized and valued by the industrial community. The application of mathematics to aid industry and business to meet society's needs is increasing. This growth is creating demand for graduates with training in Applied Mathematics.

The program in Applied Mathematics provides: (1) a strong foundation in academic mathematics; (2) computational concepts and techniques in computer science, statistics and mathematical models; (3) experiences in an area where mathematics, computers and/or statistics are utilized; and (4) a broad offering of liberal arts courses to enhance the undergraduate program.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation-----	130 credits
Required in liberal studies-----	50 credits
Required in major studies-----	71 credits
Electives-----	9 credits

PROGRAM REQUIREMENTS**LIBERAL STUDIES—50 credits required**

Course	Credit
326-101 and 102 or 326-111 and 112, English-----	6
391-100 and 508, Speech-----	4
367-1xx, Physical Education-----	2
<i>Select six credits from the following:</i>	
479-110, Psychology-----	3
387-110 or 250, Sociology-----	3-6
365-201 or 550, Philosophy-----	3-6
308-520, Biology-----	2
<i>Select six credits from the following:</i>	
320-210, 215 or 420, Economics-----	3-6
375-210, 310, Government-----	3-6
338-xxx, History-----	3-6
<i>Select three credits from the following:</i>	
326-xxx, Literature-----	3
304-xxx, Art-----	2-3
360-xxx, Music-----	2-3
391-xxx, Theatre-----	2-3
<i>Select 10 credits from the following:</i>	
372-xxx, Physics*-----	5-10
308-xxx, Biology*-----	3-10
311-xxx, Chemistry*-----	5-10

*Non-laboratory courses will be allowed only by special permission.

FOUNDATIONAL MATHEMATICS (31 cr. min.)

<i>Select eight credits from the following in analytical techniques:</i>	
355-156 and 157, Calculus and Analytic Geometry I and II-----	10
355-153, 154, 158, Calculus I, II and III-----	11
355-255, Differential Equations-----	3
<i>Required courses in algebraic techniques:</i>	
355-275, Linear Algebra-----	3
355-370, Modern Algebra I-----	3
<i>Select six credits from the following in theoretical analysis:</i>	
355-450 and 451, Real Analysis I and II-----	6
355-460, Complex Variables-----	3
<i>Select from the following electives:</i>	
355-370, Modern Algebra II-----	3
355-262, Modern Geometry-----	3

COMPUTATIONAL MATHEMATICS (22 cr. min.)

<i>Select three credits from the following in statistical methods:</i>	
354-230, Statistical Methods-----	3

354-430 and 431, Experimental Design I and II -----	4
<i>Select three credits from the following in statistical theory:</i>	
354-331 and 332, Probability and Mathematical Statistics I and II -----	6
<i>Select two credits from the following in computer languages:</i>	
354-141, Digital Computer Programming -----	2
354-241, Assembly Language -----	3
354-246, COBOL -----	3
<i>Select two credits from the following in computer methods:</i>	
354-240, Intermediate Computer Programming -----	3
354-245, Numerical Methods -----	2
354-445, Numerical Analysis -----	3
354-341, Data Structures -----	3
<i>Required courses in mathematical modeling:</i>	
354-490 and 491, Mathematical Models I and II -----	4

SUB-MAJORS IN RELATED AREAS (18 cr. min.)

Each student must select a related area where mathematics, computers and/or statistics are used. The related area can be chosen from the following: Applied Physics, Applied Research, Architectural Design, Business Management, Electronics, Food Production Quality Control, Industrial Management, Mechanical Design, Mechanical Design Drafting and Numerical Control.

ELECTIVES

In completing the program, a student may complete the requirements for a minor in business administration, physics, chemistry or biology.

ART

The non-teaching Art major program includes three divisions of study: Fine Art, Industrial Design and Interior Design. The curriculum provides students with experiences in studio work, art history, professional studies and liberal studies. It offers basic and broad experiences for those who wish to pursue goals in higher education and specific design fields. The program entails extensive work in major studio and professional areas which provide the needed breadth of experience during the freshman and sophomore years. It permits numerous elective courses during the junior and senior years and enables the student to become involved in-depth with a concentrated area of their choice. Students enjoy flexibility in determining a program suitable to their interests. Elective courses may be made from course offerings in other departments.

The art history and liberal studies requirements, considered essential for the education of the Art major, are also elective in nature with broad offerings in both areas. A 2.25 grade point is necessary for graduation. Students earn a Bachelor of Science degree upon successful completion of the program. All Art majors are required to present an exhibition of their work during their senior year.

GENERAL REQUIREMENTS—B. S. DEGREE: (Fine Art)

Total for graduation -----	132 credits
Required in liberal studies -----	62-70 credits
Required in major studies -----	50-64 credits
Electives -----	9 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—62-70 credits required

Course	Credit
English (326-101 and 102, or 326-111 and 112, and 326-250)	9
Speech (391-100)	2
Art (304-522 and 304-607)	6
Science-Mathematics core or equivalent	4-6
Physical Education	2

Select 8-10 credits from the following areas: Literature, Foreign Language, Philosophy or Speech.*

Select 8-10 credits from the following areas: Science, Mathematics, or Psychology.

Select 8-10 credits from three of the four following areas: History, Sociology, Economics or Political Science.

Select 15 credits from Art History courses.

*Students admitted to foreign language study must complete at least the second year in the language they elect in order to fulfill this requirement.

MAJOR STUDIES*—50-64 credits required

304-101, Fundamentals of Design	3
304-100, Drawing	3
304-500, Drawing	1-3
304-513, Ceramics	3
304-514, Ceramics	1-3
304-509, Painting	3
304-510, Painting	1-3
304-511, Sculpture	3
304-512, Sculpture	1-3
304-515, Art Metal	3
304-516, Art Metal	1-3
304-517, Printmaking	3
304-518, Printmaking	1-3
304-501, Life Drawing	3
304-502, Life Drawing	1-3
Studio Electives	19

*Two semesters of study in each major studio area are required. However, students are permitted to omit the second semester of any one studio area with the exception of 304-500, Drawing.

ELECTIVES—9 credits required

From Liberal Studies courses offered at Stout or those approved for transfer.

INDUSTRIAL AND INTERIOR DESIGN

GENERAL REQUIREMENTS

Industrial		Interior
131 credits	Total for graduation	130 credits
51-53 credits	Required in liberal studies	51-53 credits
71-73 credits	Required in major studies	64-67 credits
9 credits	Electives	15 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES (Industrial and Interior Design)—51-53 credits required

Course	Credit
English (326-101 and 102, or 326-111 and 112, and 326-250 or 326-351) -----	9
Speech (391-100) -----	2
Economics (320-201) -----	3
Perception (479-632) -----	3
Digital Computer Programming (354-141) -----	2
Science or Math or equivalent -----	4-6
Physical Education -----	2

Select nine credits from the following areas: Literature, Foreign Language, Philosophy, Speech.*

Select nine credits from at least two of the following areas: Political Science, Sociology, History, Anthropology.

Select eight credits from at least two of the following areas: Psychology, Biology, Chemistry, Math, Physics.

*Students admitted to foreign language study must complete at least the second year in the language they elect in order to fulfill this requirement.

MAJOR STUDIES—Industrial Design—71-73 credits required

130-110, Drafting -----	2
130-213, Mechanical Drafting -----	2
170-110, Processes: Concepts -----	3
170-205, Design for Industry -----	2
304-101, Fundamentals of Design -----	3
304-100, Drawing -----	3
304-511, Sculpture -----	3
304-300, Design Theory and Methods -----	3
304-305, Presentation Techniques -----	3
304-310, Graphic Design I -----	3
xxx-xxx, Industrial Design Studio I* -----	3
xxx-xxx, Industrial Design Studio II* -----	3
xxx-xxx, Industrial Design Studio III* -----	4
xxx-xxx, Industrial Design Studio IV* -----	4
xxx-xxx, Graphic Design II* -----	3
xxx-xxx, Symposium on Design* -----	2
xxx-xxx, History of Architecture, Art & Design I* -----	3
xxx-xxx, History of Architecture, Art & Design II* -----	3
304-522, Modern Art -----	3

Select six credits from the following courses:

304-512, Sculpture -----	1-3
304-513, Ceramics -----	3
304-515, Art Metal -----	3

Select 11-13 credits from at least four of the following courses:

170-301, Design in Wood -----	3
130-221, Architectural Design I -----	3
130-325, Architectural Design II -----	3
170-280, Packaging Fundamentals -----	2
130-414, Technical Illustration -----	3
170-501, Technology-Resources-Environment -----	2
150-314, Production Systems -----	3
309-304, Principles of Business Management -----	3

*Courses under development.

MAJOR STUDIES—Interior Design—64-67 credits required

130-110 Drafting -----	2
130-221, Architectural Design I -----	3
170-270, Light Building Construction I -----	2
214-140, Textiles -----	3
304-101, Fundamentals of Design -----	3
304-100, Drawing -----	3
304-511, Sculpture or 304-514 Ceramics -----	3
304-504, Interior Design -----	3
304-505, Problems in Interior Design -----	2
304-305, Presentation Techniques -----	3
304-315, Environmental Interior Design I -----	3
xxx-xxx, Environmental Design II* -----	3
xxx-xxx, Interior Furnishing Design* -----	3
xxx-xxx, Symposium on Design* -----	3
xxx-xxx, Interior Design Practicum* -----	4-6
304-xxx, Studio Art Electives -----	6
xxx-xxx, History of Architecture, Art and Design* -----	3
304-522, Modern Art -----	3
304-533, Period Furnishings -----	3
<i>Select seven-eight credits from at least three of the following courses:</i>	
245-330, Ecology of the Home -----	3
245-531, Ecology of Habitat -----	2
130-325, Architectural Design II -----	3
130-180, Hospitality, Living and Institutional Facility Planning -----	2
214-695, Decorative Fabrics -----	2
160-304, Principles of Business Management -----	3
170-501, Technology—Resources—Environment -----	2
*Courses under development.	

ELECTIVES—Industrial Design—9 credits required**ELECTIVES—Interior design—15 credits required**

ART EDUCATION

The Art Education program offers a curriculum designed to provide a broad experience in studio areas, art history and liberal studies, as well as appropriate experience in Art Education. Much of the program is of an elective nature, permitting the individual to develop a course of study suitable to personal needs and to gain depth in areas of one's interest. No distinction is made between Art (non-teaching) and Art Education students during the first two years of study: the Art core and liberal studies requirements are the same for both programs.

Students must decide by their junior year which program to pursue. The education curriculum is taken at this time. Art Education theory courses and student teaching are taken concurrently and comprise a full semester's study during the senior year.

There is now an optional 11 credit concentration in Special Education for those students who wish to add Special Education in Art to their core Art Education program of 132 credits.

Successful completion of the Art Education program qualifies the graduate for certification by the State Department of Public Instruction for teaching and supervision in elementary and secondary schools. A 2.25 overall grade point average and a 2.5 grade point average in Art Department courses are required for admission to student teaching. Students who complete the program receive a Bachelor of Science degree. All Art Education majors are required to present an exhibition of their work during their senior year.

GENERAL REQUIREMENTS—B.S. DEGREE:

Total for graduation-----	132 credits
Required in liberal studies -----	56-64 credits
Required in major studies -----	51 credits
Required in professional education -----	22 credits

PROGRAM REQUIREMENTS

LIBERAL STUDIES—56-64 credits required

Course	Credit
English (326-101 and 102, or 326-111 and 326-112, and 326-250) -----	9
Speech (391-100) -----	2
Art (304-522 and 304-607) -----	6
Science-Mathematics core or equivalent -----	4-6
Physical Education -----	2

Select 8-10 credits from the following areas: Literature, Foreign Language, Philosophy or Speech.*

Select 8-10 credits from the following areas: Science, Mathematics or Psychology.

Select 8-10 credits from three of the four following areas: History, Sociology, Economics, Political Science, Anthropology or Geography.

Select nine credits from Art History courses.

*Students admitted to foreign language study must complete at least the second year in the language they elect in order to fulfill this requirement.

MAJOR STUDIES*—51 credits required

304-101, Fundamentals of Design -----	3
304-100, Drawing-----	3
304-500, Drawing-----	1-3
304-501, Life Drawing -----	3
304-513, Ceramics-----	3
304-514, Ceramics-----	1-3
304-509, Painting-----	3
304-510, Painting-----	1-3
304-511, Sculpture -----	3
304-512, Sculpture -----	1-3
304-515, Art Metal -----	3
304-516, Art Metal -----	1-3
304-517, Printmaking-----	3
304-518, Printmaking-----	1-3
Studio electives -----	12

*Two semesters of study in each major studio area are required. However, students are permitted to omit the second semester of any one studio area with the exception of 304-500 Drawing.

PROFESSIONAL EDUCATION—22 credits required

421-303, Educational Psychology -----	2
421-422, Principles of Secondary Education -----	2
421-682, Reading Methods—Secondary School -----	2
405-608, Introduction to Teaching Art in Elementary Schools-----	3
405-609, Introduction to Teaching Art in Secondary Schools -----	3
405-611, Curriculum Development for Art -----	2
405-408, Practice Teaching in the Elementary School-----	4
405-409, Practice Teaching in the Secondary School -----	4

MARKETING AND DISTRIBUTIVE EDUCATION

Distributive Education is one area of the total field of vocational education supported by local, state and federal funds. Teachers graduating with this major are prepared to teach marketing at the technical school level and distributive education subjects at the high school level.

The field of distribution requires training for proprietors, managers, and employees engaged primarily in marketing or merchandising goods and services. Distributive Education provides the training for this segment of our work force.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation -----131 credits
 Required in liberal studies -----60 credits
 Required in major -----35 credits
 Required in professional education-----28 credits
 Electives -----8 credits
2. Although it is not a requirement for graduation, students should be aware of the fact that they must acquire a minimum of 2,000 hours of acceptable occupational experience before they can be certified for teaching vocational distributive education in Wisconsin.
3. Students must fulfill the English adequacy and speech proficiency requirements.
4. Specific course requirements and additional information about minors and/or concentrations can be obtained from the program director.

PROGRAM REQUIREMENTS**LIBERAL STUDIES—60 credits required**

Course	Credit
English (326-101 and 102, or 326-111 and 112, and one course in literature) ----	9
Speech (391-100 and one of the following: 391-200, 391-202, 391-204, 391-206, 391-508, or 391-512) -----	4
General Psychology (479-110) -----	3

Physical Education (366-101, 367-1xx)	3
Fundamentals of Design (304-101)	3
Social Science (320-210, 320-215, 375-210, 387-110 and one course in history) --	15
Science (Biology, Chemistry or Physics, including one lab course)	7-8
Mathematics (355-120 to total 12 credits with science courses)	4-5
Music or Theatre	2
Electives (Philosophy, Foreign Language or any of the above areas)	9

MAJOR STUDIES—35 credits required

150-150, Industrial Organization	2
160-330, Principles of Marketing	3
160-206 and 207, Principles of Accounting	6
160-370, Principles of Advertising	3
160-245, Business Data Processing	3
320-325, Economics and Business Statistics	3
160-334, Salesmanship and Sales Management	3
160-318, Business Law	3
160-679, Marketing Research	3
160-323, Retail Merchandising and Management	3
479-582, Personnel Management	3

PROFESSIONAL EDUCATION—28 credits required

421-303, Educational Psychology	2
421-422, Principles of Secondary Education	2
469-602, Principles of Vocational, Technical and Adult Education	2
421-682, Reading Methods—Secondary School	2
416-304, Introduction to Teaching—Distributive Education	3
413-501, Introduction to Guidance	2
416-404, Curriculum Development—Distributive Education	5
416-408, Student Teaching—Distributive Education	8
469-560, Cooperative Occupational Education Programs	2

ELECTIVES—8 credits required

From courses offered at Stout or those approved for transfer.

SCHOOL OF EDUCATION

John B. Stevenson, Ph.D., Dean

Programs:

Psychology
Vocational Rehabilitation

PSYCHOLOGY

Psychology, as defined within the program at Stout, is the systematic study of behavior with particular emphasis on the behavior of individuals, their actions, reactions, and cognitions. The basic purpose of the study of Psychology at Stout for the student is learning how to contribute to the improved condition of man. The program provides students with the learning experiences that lead to eventual employment wherever Psychology is applied in educational institutions, public and private institutions, and industry. Students entering the program should realize that they must obtain graduate level education or other advanced training experiences before they can be considered and accepted as professional psychologists.

Each student in the program studies the major components of man's behavior and existence: his development, learning, perception, motivation, personality, relationships, decision-making, evaluation behaviors, valuing behaviors, and communications. The principle guide for all students' individualized course of study is their development within eight competency areas: knowing, perceiving, relating, planning, doing (carrying out plans), evaluating, judging relevance, and communicating as they relate to the components mentioned above. To graduate, students must have developed their competency in these areas at a high enough level to gain admission to a graduate or professional school or to enter directly into related employment. In addition, each student is expected to develop a high degree of literacy in the areas of the Arts, Humanities, Sciences, Social Sciences, and Communications.

GENERAL REQUIREMENTS—B.A. DEGREE:

Total for graduation-----	130 credits
Required in liberal studies-----	70 credits
Required in major studies-----	40 credits
Electives-----	20 credits

PROGRAM PLANNING

After entering the Psychology program, all students prepare and submit a tentative plan for the remainder of their undergraduate program as a part of their activities in Psychology Seminar I. This tentative plan is based on their particular personal, vocational, and professional interests and goals, and is developed with the guidance of the Psychology faculty.

PROGRAM REQUIREMENTS

LIBERAL STUDIES—70 credits required

Communications (at least 25 cr.) Suggested courses include fundamental English courses and advanced writing courses; fundamental and advanced speech courses; foreign languages; basic statistics; computer programming; journalism; graphic arts; audio-visual communications; reading courses; and others.

Fine Arts, Physical Education, and Humanities (at least 15 cr.) Suggested courses include art and music appreciation courses; literature courses; philosophy courses; and physical education courses which develop and promote personal health and recreation skills. Mathematics, Natural and Physical Sciences (at least 15 cr.) Strongly advised courses include at least one college-level math course and one laboratory science course. Courses in community hygiene, genetics, physiology, anatomo-

my, sexual biology, ecology, ethology and organic chemistry are particularly appropriate. Applied Mathematics courses (e.g., Computer Programming, Statistics, etc.) cannot be used for electives in this category, but with planning, may be used as Communications credit.

Social Sciences (at least 15 cr.) Strongly advised courses include at least one sociology course and a balance of courses in history; economics; government; political science; and anthropology.

MAJOR STUDIES—40 credits required

All Psychology students enroll in a continuing seminar as a part of their program which is divided into three distinct units. Students progress through these seminars as they develop new competencies and demonstrate their achievements. Beginning students in Psychology must complete 479-110, 479-120, 479-150 and 479-190 before they advance to Seminar II and enroll in Psychology courses above the 100 level.

Course	Credit
<i>Required courses:</i>	
479-100, Psychology Seminar I—Foundations-----	1
479-110, General Psychology-----	3
479-120, Psychology: Its History and Systems-----	3
479-150, Man: A Course of Study-----	3
479-190, Psychological Methods I-----	3
479-300, Psychology Seminar II-----	1
479-400, Psychology Seminar III-----	1
479-x99, Independent Study-----	(at least)-1
479-x98, Field Experience-----	2
<i>Elective Psychology courses at the Seminar II level:</i>	
479-251, Child Psychology-----	3
479-260, Personality and Mental Health-----	3
479-390, Experimental Psychology-----	3
479-530, Psychology of Learning-----	3
479-540, Psychology of Individual and Group Differences-----	3
479-552, Adolescent Psychology-----	3
479-561, Abnormal Psychology-----	3
479-562, Psychology of the Exceptional Child-----	2
479-571, Psychology of Marriage and the Family-----	2
479-632, Perception-----	3
326-541, Psycholinguistics-----	3
308-520, Comparative Ethology I-----	2
387-250, Social Psychology-----	3
303-220, Introduction to Cultural Anthropology-----	3
<i>Elective Psychology courses at the Seminar III level:</i>	
479-581, Industrial Psychology-----	2
479-582, Personnel Management-----	3
479-690, Psychological Measurement-----	3
413-501, Introduction to Guidance (and one other 413 course)-----	2-4
421-303, Educational Psychology (and one other 421 course)-----	2-4
459-101, Introduction to Rehabilitation (and one other 459 course)-----	3-6

MINOR STUDIES—22 credits required

Each student in the Psychology program is required to complete a minor program. It is quite common for minor program requirements to overlap the requirements in both the Liberal Studies and the Major Studies areas of the program.

ELECTIVES—20 credits required

The number of elective credits taken in this category depends upon the students' choice of a minor and their total program plan. Many courses in the School of Home Economics and the School of Industry and Technology help students in Psychology to develop needed competencies. These are suggested to students in seminars and in separate communications.

SENIOR THESIS

As a culminating experience in the program, in conjunction with Seminar III, students conduct and report an original research project pertinent to Psychology and to their own particular interests in Psychology. This project provides the opportunity for the students to practice the skills they have acquired and to apply the knowledge they have attained in their studies.

VOCATIONAL REHABILITATION

The main objective of this program is to provide the field of rehabilitation with baccalaureate level personnel who have the competencies necessary to help handicapped citizens optimize their vocational potential. A general listing of these competencies includes:

- A. Knowledge of the history, philosophy, and development of the rehabilitation movement; knowledge of the rehabilitation process as it exists in various settings, including sheltered workshops, rehabilitation facilities, vocational rehabilitation agencies; knowledge of mental, physical, and social disabilities plus the vocational limitations of these disabilities; knowledge of, and ability to utilize community resources to assist the handicapped; knowledge of, and ability to relate to allied professions: medicine, psychology, social work, physical therapy; and knowledge of, and ability to utilize occupational information and career planning methods.
- B. Elementary skill in the use of vocational evaluation techniques; elementary skill in work adjustment and counseling techniques; and elementary skill in utilizing job placement and follow-up procedures for the handicapped.
- C. Ability to interact effectively with handicapped people. Handicapped persons include those with physical, emotional and social disabilities such as: mental illness, mental retardation, blindness, deafness, alcoholism, epilepsy, and those who have committed criminal offenses. The graduates of this program are employed in sheltered workshops, rehabilitation facilities, state vocational rehabilitation agencies, adult day care centers, mental health clinics, half way houses, and a variety of other facilities serving the handicapped. Opportunities for advancement to supervisory and administrative positions are excellent. Graduate study in rehabilitation is available in more than 80 colleges and universities.

GENERAL REQUIREMENTS—B.S. DEGREE:

1. Total for graduation ----- 130 credits
 Required in liberal studies ----- 41 credits
 Required in major studies ----- 48 credits
 Required in special studies* ----- 22 credits
 Electives ----- 19 credits
 *Students must select a special studies concentration from either business, home economics, industry, physical education, or develop his own individualized concentration with the advice of their faculty advisor. Courses in these areas are designed to provide specific technical skills for working with the handicapped and disadvantaged in rehabilitation settings.
2. Students majoring in rehabilitation must obtain a "C" or better in all courses taught in the rehabilitation department. The student will have the option of taking the course over again and obtaining a "C" or better or dropping from the program. In addition, an overall grade point of 2.5 is required for all courses taught by the rehabilitation department.
3. Students must fulfill the English adequacy and speech proficiency requirements of the respective departments.

PROGRAM REQUIREMENTS

LIBERAL STUDIES—41 credits required

Course	Credit
326-101 and 102, and 326-345 or 346 or 347, English -----	9
391-100, Speech -----	2
479-110, General Psychology -----	3
387-110, Introductory Sociology -----	3
308-132, Physiology and Anatomy -----	4
308-220, Physiology of Disabilities -----	3
Social Science (Must choose two of the following courses):	
History of America (338-220), Government (375-210) or General Economics (320-201) -----	6
367-lxx, Physical Education -----	2
Liberal Arts (Must choose one course from each of the following areas): (a) Art, Music, Theater; (b) Literature, Language; (c) Math, Science, Philosophy -----	9

MAJOR STUDIES—48 credits required

459-101, Introduction to Rehabilitation -----	3
459-202, Community Resources -----	3
459-205, Rehabilitation Practicum -----	4
479-561, Abnormal Psychology -----	3
459-x98, Field Experience or -----	2
459-x99, Independent Studies -----	2
479-300, Rehabilitation of Physical Disabilities -----	3
459-310, Vocational Evaluation -----	4
459-311, Work Adjustment Process -----	3
459-400, Rehabilitation Seminar -----	1
459-585, Mental Retardation -----	2
459-410, Placement Process with the Handicapped -----	3

413-675, Counseling Theory	2
459-680, Principles of Rehabilitation Counseling	2
<i>Select 13 credits from the following restrictive electives:</i>	
459-x98, Field Experience	up to 4
459-x99, Independent Studies	up to 6
459-401, Caseload Management	2
459-402, Rehabilitation Facilities Administration	3
459-505, Communication with the Deaf	3
459-506, Manual Communication II	3
459-320, Rehabilitation of the Chemically Dependent	3
459-403, Psychological Handicaps and Work	3
421-205A, Professional Teacher Educational Seminar	2
459-325, Rehabilitation of the Sensory Disabled	3

SPECIAL STUDIES—22 credits required from one of the five following specialties:

BUSINESS TRACK

160-206, Principles of Accounting I	3
160-207, Principles of Accounting II	3
Business restrictive electives	16

HOME ECONOMICS TRACK

Human Development-Family Living restrictive electives	8
Habitational Resources restrictive electives	4
Food and Nutrition restrictive electives	5
Apparel, Textile, and Design restrictive electives	5

INDUSTRIAL TRACK

170-101, Processes: Concepts	3
150-200, Production Management	3
Industrial Arts and Production Management Restrictive Electives	16

PHYSICAL EDUCATION TRACK

367-315, Adapted Physical Education	3
366-340, First Aid	2
367-370, Elementary Physical Education	2
367-235, Rhythmical Activities or	2
367-215, Gymnastics—Women	2
367-340, Camp Leadership or	2
367-325, Recreation Leadership	2
367-212, Foundations of Physical Education	1
Physical Education restrictive electives	10

INDIVIDUALIZED CAREER TRACK

This track is designed for students whose educational goal cannot be met by any of the previous tracks. Students who elect this track must develop, with the advice and consent of their faculty advisor, a list of the 22 credits they plan to take. They must also submit a written rationale for the selection of these credits explaining how they will promote their educational and career goals. This list and rationale signed by the student and the student's advisor will be kept in the student's file.

ELECTIVES—19 credits required

From courses offered at Stout or those approved for transfer.

SPECIAL EDUCATION TEACHER CERTIFICATION

Special Education Teacher Certification (Secondary EMR) may be obtained along with a B.S. Degree in Vocational Rehabilitation by completing a special track. Students considering this unique program must see the special education program director for arrangements.

The following is a listing of the required Special Education courses:

431-185, Introduction to Handicapped Youth -----	3
431-560, Education of Handicapped Youth: Methods and Materials-----	3
431-561, Education of Handicapped Youth: Educational Management-----	3
431-562, Clinical Experience -----	2
431-660, Practicum in Special Education-----	2
431-661, Career Education-----	3
431-662, Classroom Management-----	3
431-480, Student Teaching -----	8
421-205, A,B,C,D,E,G. Professional Teacher Education -----	12
431-555, Issues in Special Education or-----	2
431-581, Legal Rights of the Handicapped -----	2

MINORS

Art	English	Physics
Biology	History	Psychology
Business Administration	Journalism	Safety
Chemistry	Mathematics	Sociology
Computer Science	Physical Education	Speech
Economics		

Minors are defined as teaching and non-teaching. Teaching minors are those approved by the State Department of Public Instruction for certification. Requirements for the teaching minors include an education major and a methods course in the minor, in addition to the required credits within the minor. Programs for minors must be approved by the department offering the minor.

ART

Twenty-three or 24 semester hours are required. Required courses are 304-101, 304-100, 304-509, 304-511 and 304-522. The additional eight or nine credits may be accumulated for the minor by taking any studio or art history courses offered by the Art Department.

BIOLOGY

A minor in Biology may be completed as a teaching or a non-teaching minor. A teaching minor consists of 22 semester hours of biology plus one semester of inorganic chemistry (311-115 or 311-135). The required courses in biology for the teaching minor are 308-132, 308-142, 308-152 and 308-306. Additional courses to complete 22 semester hours of biology will be selected. Of these no more than two of the courses 308-150, 308-332 and 308-342 will be acceptable. The course 308-122 is acceptable only when taken before the courses 308-142 and 308-152.

A non-teaching minor consists of 22 semester hours of biology. The required courses in biology are 308-132, 308-142, 308-152 and 308-306. Additional courses to complete 22 semester hours of biology will be selected. Of these no more than two of the courses 308-150, 308-332 and 308-342 will be acceptable. The course 308-122 is acceptable only when taken before the courses 308-142 and 308-152. Inorganic chemistry is not required for the non-teaching minor.

All students entering a minor program in biology will be assigned a faculty advisor to aid the student in proper scheduling of courses.

BUSINESS ADMINISTRATION

A minor in Business Administration consists of 22 semester hours. Minor programs are to be approved by the department. Required courses are 160-206, 160-207, 160-304, 160-330, 320-210 and 320-215 (18 credits). Elective courses may be selected from any business course or other course(s) approved by the Department of Business and Industrial Management (4 credits).

CHEMISTRY

Twenty-two semester hours are required. Required courses are 311-115 or 311-135; 311-136 and 311-201. Chemistry minors who plan to obtain teaching certificates are required to select 311-531, 311-501 and 311-503. Additional chemistry courses will be selected.

COMPUTER SCIENCE

A minor in Computer Science requires 355-120 or 365-301; 354-141, 354-240, 354-241 and Independent Study. Additional courses will be selected.

ECONOMICS

Students may select a 22-credit minor in Economics either for teaching or non-teaching. Required courses are 320-210, 320-215, 320-325, 320-410 and 320-415. Additional economics courses will be selected. 338-520 may be included.

ENGLISH

A minor in English consists of 22 semester hours. All English minor programs must be approved by the Department of English.

Students who wish to be certified to teach English must take a teaching minor in English. A teaching minor in English must include the following courses: 326-340, 326-344, 326-412. From each of the following sets, students must choose at least one: a) 326-350, 326-355, 326-360; b) 326-348, 326-400, 326-401. Additional credits will be selected from the offerings in English, exclusive of 326-101 and 326-102; 326-111, Honors, and 326-112, Honors, may be included.

A non-teaching minor in English for those who do not wish to be certified to teach is taken with an option in either literature or writing.

The non-teaching English minor with an option in literature must include one course in English Literature and one course in American Literature. The remaining 16 credits may be selected from the other literature offerings; one advanced writing course may be included; 326-347 is suggested.

The non-teaching minor in English with an option in writing includes courses from the following blocks: (1) language (a minimum of three semester hours), (2) literature (a minimum of six semester hours), (3) writing (a minimum of 11 semester hours) and (4) electives (a minimum of two semester hours from any of the above blocks).

HISTORY

Students may elect a 22-credit minor in History either for teaching or non-teaching. Required courses are 338-120, 338-121, 338-140 and 338-141. Additional history courses will be elected.

Students who take a teaching minor must include two out of the following courses: 338-360, 338-380 and 338-322.

JOURNALISM

Twenty-two semester hours are required. Required courses are 326-306, 326-518, 326-410, 326-515 or 326-516; 326-425, 479-579, 130-140 and 600-504. Additional courses will be selected from 326- (any literature course numbered 200 or above), 304-101, 130-475, 375-210, 338-220, 338-210, 387-515, 375-310, 391-554, 391-244, Field Experience and Independent Study.

MATHEMATICS

Twenty-two semester hours are required. Minor programs are to be approved by the department. Courses required for teaching certification are: 355-153 or 355-156; 355-262, 355-275, 354-331 and 355-370. Additional courses will be selected.

PHYSICAL EDUCATION

Twenty-two semester hours are required. Students select a minimum of nine credits in activity courses. Required courses are 367-225 or 367-226 or 367-471, 367-245 or 367-255 and 367-121 or 367-187. Electives are chosen from 367-215, 367-235, 367-241, 367-342, 367-115, 367-123, 367-136, 367-140, 367-142, 367-150, 367-152 and 367-173. The 13 professional theory courses include 366-340 or 366-350, 367-212, 366-102 and 366-355 as requirements. Electives are chosen from 367-315, 367-325 or 367-340, 367-345, 367-375 and 367-450. For teacher certification in physical education, the student must also take 367-408.

PHYSICS

Twenty-two semester hours are required. Required courses are 372-221, 372-222, 372-223, and 372-529. At least eight credits with a 500 number or greater must be included in the minor program. All minor programs must be planned with and approved by the Physics Department.

PSYCHOLOGY

Twenty-two semester hours are required. Required courses for 11 semester credit hours include: 479-110; 479-260 or 479-561; one of the following: 479-190, 479-690, 421-541, 413-690, 354-230 or 354-130; 479-251 or 479-252. Courses from which to select 11 or more semester credit hours include: any of the courses listed above not already taken; 479-120, 479-150, 479-390, 479-530, 479-532, 479-540, 479-562, 479-571, 479-581, 479-582, 413-655, 413-675, 413-691, 421-303, 459-585, 303-220, 387-250, 326-541, 308-520, Field Experience and Independent Study in Psychology.

SAFETY

Twenty-two semester hours are required. Required courses are 110-270*, 110-271, 110-375, 110-377, 110-378, 110-574 and 110-575; at least one of the following two courses is required: 110-577 or 110-578. The elective grouping is as follows: 366-340, 421-303, 600-560, 413-501. *Prerequisite for 110-377.

SOCIOLOGY

Twenty-two semester hours are required. Required course is 387-110. Additional sociology courses will be selected. 303-220 and 479-571 may be included.

SPEECH

A teaching minor in Speech consists of 22 semester hours. Required courses are 391-100 and 391-200. Additional speech courses will be selected. One literature course from the English Department may be included when the course is approved by the Speech Department. A teaching minor in theatre is available also. All teaching minors also include a methods course.

A non-teaching minor consists of 22 semester hours with the four following options: General Speech, Communication and Public Address, Radio-Television-Film, and Theatre. Each minor includes a minimum of 10 semester hours in the option, plus 12 semester hours from the remaining three areas. A literature course may be included.

All speech minors must be planned with and approved by the Speech Department.

COACHING CERTIFICATION

Sixteen semester hours are the minimal requirement with at least one course in each of five areas. Area I: 366-340 and 366-350. Area II: 367-350 and 367-450. Area III: 367-201, 367-460, 367-461, 367-465, 367-470, 367-471 and 367-478. (No more than two courses may be selected in Area III.) Area IV: 366-355 and 308-132. Area V: 366-102 and 308-362.

THE COURSE DESCRIPTIONS

The courses on the following pages are listed in numerical order with the School of Industry and Technology courses beginning with 100; Home Economics—200; Liberal Studies—300; and Education—400. Learning Resources is the 600 series. Courses numbered 500 are special courses assigned to the Academic Affairs office.

INDUSTRY AND TECHNOLOGY

100-590 TECHNICAL SERVICE SCHOOLS 1-6 Cr. Many manufacturers offer special purpose technical courses. Some of them are suitable for college credit. The following guidelines are used to award such credit: 1) the student makes all the arrangements with the manufacturer offering the course; 2) credit is awarded on the basis of one credit for each full week (40 clock hours) of attendance; 3) students must be enrolled and pay fees at the university prior to taking the course; 4) approval by the Dean of S.I.T. will be necessary prior to enrollment for credit; 5)

Graduate College approval must be necessary for graduate students taking this course for graduate credit.

ENERGY AND TRANSPORTATION

110-101 ENERGY IN INDUSTRY 2 Cr. The study of energy—sources, forms, control, conversion, transmission, storage: past, present and future.

110-103 POWER MECHANICS 2 Cr.

The study of the internal and external combustion heat engines and principles of mechanical and fluid transmission systems. Present and future applications and limitations are identified. Practical laboratory experiences are emphasized.

110-201 TRANSPORTATION 2 Cr.

Development of the concept area of transportation as related to the need, preparation, methods, destination and control as it relates to American Industry.

110-204 ELECTRICITY 3 Cr.

A study of electricity and its associated phenomena such as resistance, capacitance, inductance, DC and AC current, voltage and power. Also included are the principles which apply to motors, generators, transformers, circuits, and consideration for safe generation, distribution and use. Prerequisite: 355-120 or equivalent, 110-101 or 372-221.

110-209 POWER MECHANICS-

SMALL ENGINE SERVICE 2 Cr. Mechanical principles and functions of small power units. Operation, maintenance, tune-up and overhaul procedures of small two- and four-cycle engines.

110-210 GENERAL MOTOR ME-

CHANICS 2 Cr. Consumer knowledge on automobile chassis, internal combustion engine components, fuels, ignition, suspension, and drive systems including service and adjustment techniques.

110-211 ELECTRICAL CIRCUITS

AND ACCESSORIES 2 Cr. Automotive

starting, generating, ignition, and accessory circuits. Test and repair techniques with emphasis on batteries, cranking, charging and accessory units.

110-240 ELECTRONICS 2 Cr.

Solid state rectifiers, amplifiers, oscillators and associated input and output devices. Concepts of electronic communications and application of equipment to selected problems are also studied. Not applicable to the electronics concentration. Prerequisite: 110-204.

110-243 SEMICONDUCTOR ELEC-

TRONICS 3 Cr. An analytical study of semiconductor physics, P-N junction diodes, CE, CB, CC configuration analysis, biasing and stabilization, graphical analysis, Z, Y, H and G equivalent circuit, T-models, R.F., A.F., and DC circuit analysis. Laboratory work is required. Prerequisite: 110-204.

110-244 ELECTRONIC CIRCUITS 3

Cr. General electronic circuits, amplifiers, oscillator, wave-shaping circuits, power supply circuits and instrumentation. Laboratory work is required. Prerequisite: 110-204.

110-248 ELECTRIC MACHINERY 3

Cr. Energy conversion theory, rotating machinery concept, engineering consideration, DC motors, synchronous machines, induction machines, fractional horsepower motors and speed control techniques of motors. Prerequisite: 110-204.

110-256 DIGITAL COMPUTER SYS-

TEMS 3 Cr. Linear wave shaping, pulse transformers and delay lines, steady state switching, clamping and clipping circuits, switching circuits, logic circuits, multi-vibrators, time base generators, sampling gates. Laboratory work is required. Prerequisite: 110-243 or 110-244.

110-260 INTRODUCTION TO FLUID POWER 2 Cr. Fundamentals of fluid power: basic fluid mechanics, pneumatics, hydraulics, control systems, common industrial circuits are discussed and tested.

110-270 SELECTED DRIVING TECHNIQUES 1 Cr. The purpose of this course is to prepare students who would meet the teacher certification requirements of selected driving courses offered by state governmental agencies and the National Safety Council. These selected courses are Defensive Driving, Motorcycle Operators, and School Bus Drivers offered by the National Safety Council and the Driver Improvement course offered by the Wisconsin Department of Transportation.

110-271 SAFETY, PRINCIPLES AND PRACTICES 3 Cr. Introduction to the philosophy and principles of accident prevention. School safety programs. Identification of resources and content such as motor vehicle, home, public, farm, industrial, school, recreational, and civil defense. Prerequisite: Sophomore standing.

110-278 HUNTER SAFETY INSTRUCTOR COURSE 1 Cr. Hunter safety instruction techniques to certify elementary and secondary school instructors.

110-279 SNOWMOBILE SAFETY INSTRUCTOR'S COURSE 1 Cr. Teaching and administrative techniques for snowmobile safety programs.

110-308 THERMODYNAMICS OF INTERNAL COMBUSTION ENGINES 2 Cr. The study of fuels, oxidants and propellents, combustion and combustion processes, and gas laws as they apply to internal combustion engines. Prerequisites: 355-120, 355-121 and 372-221.

110-311 FUELS AND CARBURETION 2 Cr. Internal combustion engine fuels, fuel systems, and carburetion principles including exhaust emission control devices. Theory and application experience.

110-314 CHASSIS AND RIDE CONTROL 2 Cr. Automotive suspension systems, ride control and brakes. Laboratory work on wheel alignment, balancing, steering systems, and brake rebuilding. Prerequisite: Junior standing.

110-320 BODY REPAIR AND REFINISHING 3 Cr. Damage analysis, repair procedures, surface preparation, and finish application on automobile bodies; accessories, trim, and interiors also included. Prerequisite: Junior standing.

110-341 BASIC INSTRUMENTATION AND CONTROL 2 Cr. Principles and practices of measurement and industrial control. Open and closed loop control system of control are studied. Transducers, analog to digital converters, and automatic read-out systems are presented. Prerequisite: 110-240.

110-342 ELECTRONIC COMMUNICATION 2 Cr. A study of electronic communication systems to the depth where the student will understand the function, principle of operation, application, and limitations of each system. Prerequisite: 110-240.

110-345 NETWORK ANALYSIS 3 Cr. A theoretical approach of electrical network analysis. Network equations, Laplace transformation, frequency domain analysis, applied differential equations, steady state and transient analysis. No laboratory work is required. This course is required for students to pursue more advanced studies in electronics. Prerequisite: 110-204, 355-255.

110-353 INFORMATION THEORY 3 Cr. Electronic communication theories, information transmission, network responses to signals, modulation systems, demodulation systems, amplitude modulation, double sideband, single sideband, narrow band frequency modulation, wide band frequency modulation systems, periodic sampling pulse modulation and demodulation, and noise analysis. Prerequisite: 110-243, 355-154 or 355-157.

110-360 APPLIED FLUID MECHANICS 3 Cr. Analysis of fluid flow laws and principles. Application to power components and circuits are stressed with special emphasis on fluid statics, fluid flow concepts, viscous effects; and compressible flow. Prerequisite: 355-121.

110-361 INDUSTRIAL HYDRAULICS 2 Cr. Theory, operation and construction of hydraulic systems and circuits with emphasis on the components: Pumps, reservoirs, lines, control valves, and actuators. Prerequisite: 110-260.

110-362 INDUSTRIAL PNEUMATICS 2 Cr. Theory, operation, and construction of components common to pneumatics and pneumatic-hydraulic systems with application to basic industrial circuits. Components considered: compressors, plumbing, control valves, and actuators. Prerequisite: 110-260.

110-363 FLUID POWER MEASUREMENT AND CONTROL 2 Cr. A study of measurement and control devices as they relate to circuit and systems control with special concern with flow, pressure, speed and torque. Mechanical, electrical, pneumatic and fluidic controls are studied. Prerequisites: 110-260 and 110-360.

110-375 DRIVER AND TRAFFIC SAFETY 3 Cr. Curriculum selection

and use, instructional resources and materials, psychophysical and self-instructional evaluative devices will be explained. Major emphasis is placed on the classroom phase of driver education.

110-376 ADMINISTRATION OF DRIVER AND TRAFFIC SAFETY EDUCATION 3 Cr. Comprehensive programming of driver and traffic safety education programs. Emphasis on simulation, range, adult programs, instruction, and psychology of driver. Simulation laboratory experiences included. Prerequisite: 110-375.

110-377 DRIVER EDUCATION LABORATORY METHODS AND TECHNIQUES 3 Cr. Role, aims, and objectives of laboratory programs in driver and traffic safety education are examined. Direct laboratory experiences in simulation on street behind the wheel, and multiple car driving range will be provided for the students. Emphasis will be placed in multiple student teaching techniques.

110-378 ADMINISTRATION OF DRIVER AND TRAFFIC SAFETY EDUCATION PROGRAMS 2 Cr. The organizational and administrative function of driver and traffic safety education programs will be investigated. Special attention will be given to teacher certification, state approval forms, budget, public relations, scheduling, and evaluating specific programs.

110-380 DRIVER EDUCATION FOR THE HANDICAPPED 2-3 Cr. Emphasis will be placed upon curriculum content, instructional methods and techniques, legal implications, driving aids and financial assistance programs. The lab experience will include teaching handicapped people how to drive.

110-508 BICYCLE MAINTENANCE REPAIR AND TRANSPORTATION 2 Cr. Bicycle maintenance, repair, troubleshooting and safety procedures. Units in bicycle selection, vocational opportunities, transportation and bikeway design will be included.

110-574 ALCOHOL, DRUGS AND ACCIDENT PREVENTION 2-3 Cr. The role of alcohol and drugs and their relationship to accident prevention programs will be examined. The problem of alcoholism and drug addiction and present efforts for rehabilitation will be explored. Educational programs dealing with the physiological, psychological, and sociological effects of alcohol and drugs will be discussed.

110-575 BEHAVIORAL APPROACH TO ACCIDENT PREVENTION 2-3 Cr. The philosophical and theoretical basis of accident prevention efforts will be explored. The behavioral task is analyzed from the physiological, medical and physical, psychological, sociological, and culture perspective. The course will also include a critical analysis of principles and methods appropriate in identifying, understanding and modifying unsatisfactory attitudes and behavior.

110-577 DRIVER IMPROVEMENT PROGRAMS 2 Cr. The improvement of drivers through educational methodology, curriculum planning, and research. Special attention given to adult programs, mentally retarded, orthopedically handicapped, as well as the chronic violator and the accident repeater. Prerequisite: Six semester hours of course work in Safety studies.

110-578 TRAFFIC AND HIGHWAY SAFETY PROGRAMS 3 Cr. An overview of the traffic and highway safety problems, components, research agencies, national, state and local policies, standards, and recommendations

for improved traffic safety. Prerequisite: 110-271 or consent of instructor.

110-581 PRINCIPLES OF OCCUPATIONAL SAFETY 3 Cr. An overview of occupational accident prevention programs. Emphasis on techniques of measurement, cost of accidents, locating and identifying accident sources, psychology of occupational safety and problems of selecting corrective action. Prerequisite: Junior standing.

110-582 OCCUPATIONAL SAFETY PROGRAMMING 3 Cr. In-depth study of current administrative, organizational, and supervisory practices which are specifically and uniquely related to managing the operational, industrial or occupational accident program. Prerequisite: Junior standing.

110-583 VOLUNTARY OSHA COMPLIANCE 2-3 Cr. This course will consist of an in-depth investigation of the Federal Occupational Safety and Health Act of 1970 and its implications towards industry's voluntary compliance with the federal regulations enforced by the Occupational Safety and Health Administration. Other areas will include Federal/State OSHA Programs and their impact on industrial operations, and will provide guidelines for systematic self-inspection and compliance procedures.

110-584 OSHA FEDERAL STANDARDS AND REGULATIONS 2 Cr. This course will consist of an in-depth investigation of the Federal Standards and Regulations enforced by the Occupational Safety and Health Administration. In addition, the American National Standards Institute's Standards will be reviewed along with the National Fire Protection Association's work place standards.

110-585 CONTEMPORARY PROBLEMS IN OCCUPATIONAL SAFETY

3 Cr. This course will provide an in-depth view of the various specialized administrative and operational problems encountered by the part-time safety specialist or the safety professional. In addition, it will expose the student of occupational safety to the broad scope of functions and tasks that confront the career safety man.

110-611 TUNE-UP AND DIAGNOSIS 2 Cr. Practicum in automotive tune-up and diagnostic service procedures, service operations with all types of modern automotive test equipment. Prerequisites: 110-211 and 110-311.

110-614 TRANSMISSION AND DRIVE TRAINS 2 Cr. Power transmission through gears, clutches and drives common to the automobiles. Fluid couplings, gear sets, differentials, transmissions and drive lines. Prerequisite: 110-314.

110-615 ENGINE MACHINING AND REBUILDING 3 Cr. The rebuilding of four-stroke cycle engines including all necessary precision machining. Special emphasis given to cylinders, blocks, valve trains and reciprocating parts. Prerequisite: Junior standing.

110-625 AUTO SHOP MAINTENANCE AND MANAGEMENT 3 Cr. Maintenance and management of equipment and personnel peculiar to the auto shop. Prerequisite: Senior standing.

110-630 AEROSPACE 3 Cr. Classroom, field and optional flight experiences for educators who wish a better understanding of today's aviation or aerospace industries, details of space exploration, federal licensing regulations, air traffic control, and related career guidance information.

110-631 PRIVATE PILOT'S GROUND

SCHOOL 3 Cr. Prepares the beginning flight student for an F.A.A. Private Pilot's Certificate through the study of airplane utility, flight manuals, safety, federal aviation regulations, navigation, communication, weather, general operation of aircraft and flight theory.

110-635 INTRODUCTION TO FLIGHT 2 Cr. Development of skills and knowledge of flying a single engine aircraft. Instruction includes applied flight theory, dual flight instruction and solo flight. Prerequisite: 110-631.

110-650 ELECTRONIC CONTROL SYSTEMS 3 Cr. General electronic control systems, sensing devices, control devices, sequence control, basic feedback control principles, analog computation and control, numerical controls. Laboratory work is required. Prerequisite: 110-345.

110-653 COMMUNICATION SYSTEMS I 3 Cr. An analytical study of communication transmission and receiving systems, the circuits and design techniques of systems, signal transmission systems, signal receiving systems, and applied techniques. Laboratory work is required. Prerequisites: 110-345, 110-353.

110-656 PULSE AND SWITCHING CIRCUIT ANALYSIS 3 Cr. An analytical study of electronic circuit design, philosophy of circuit design, general design procedures, C.C. and low frequency design, high frequency design, digital circuit design, switching circuit design, power supply, analog computer design, circuit evaluation techniques. Laboratory work is required. Prerequisites: 110-256, 110-345.

110-660 FLUID POWER SYSTEMS DESIGN 3 Cr. Introduction to fluid power systems design through problem solving in areas of load analysis, circuit

control, and component selection. Prerequisites: 110-260, 110-360, 110-361, 110-362 and 110-363.

GRAPHIC COMMUNICATIONS

130-100 COMMUNICATIONS 2 Cr. Development of the concept area of communication source, message, receiver, feedback, and interference; study of graphic, electronic, human and media systems of communication.

130-110 DRAFTING 2 Cr. A graphic communication involving projection concepts to correctly represent three-dimensional forms on two-dimensional surfaces. Principles of shape description, size description, and drafting techniques are implemented through the utilization of problem solutions.

130-140 GRAPHIC ARTS 2 Cr. Broad concepts of the several methods of reproducing visual images. Includes study in design and layout, composition methods, photo-conversion techniques, image carrier devices, image transfer mechanisms, finishing and binding procedures, and economic highlights of the graphic arts.

130-180 HOSPITALITY, LIVING AND INSTITUTIONAL FACILITY PLANNING 2 Cr. Hotel and restaurant drafting involves the use of basic architectural drafting and design content, concepts, media, technique, and methods to record ideas, communicate ideas, and solve problems relevant to hotel and restaurant management.

130-212 DESCRIPTIVE GEOMETRY 3 Cr. The graphic representation and solution of space problems involving point, lines, planes, intersections,

revolutions, and vectors. Prerequisite: 130-110.

130-221 ARCHITECTURAL DESIGN I 3 Cr. An introduction to architectural design through the solution of design problems: analysis of site and client's needs, preliminary sketches, presentation drawings and working drawings. Study of: contemporary residential architecture structural systems, nature of structural materials, residential codes, FHA minimum property standards, frame construction, residential mechanical systems, lighting, electrical systems and estimating. Prerequisite: 130-110 or consent of instructor.

130-230 MECHANISMS 3 Cr. Graphical and analytical analysis and synthesis of linkages, cams and gear trains. Prerequisites: 130-212, 372-221.

130-246 TYPOGRAPHY 3 Cr. The basic concepts of two-dimensional design and its relationship to typography in terms of the various printing mediums, art mediums, photography, layout and keylining, type classification and selection, composition practices, color systems and materials. Laboratory experiences with the various materials and techniques used in preparing copy for reproduction. Prerequisite: 130-140 or consent of instructor.

130-251 COMPOSITION 3 Cr. Major emphasis upon cold type composing procedures including impact, transfer, and photo-lettering. Limited attention given to hot type composing procedures as represented in foundry type and hot metal casting. Prerequisite: 130-140 or consent of instructor.

130-290 MECHANICS OF SOLIDS I 3 Cr. Introduction to applied mechanics including: Technical calculations, dimensional analysis, freebody diagrams, force systems and equilibri-

um, friction, elementary statically determinate framed structures, and simple stress. Graphical and mathematical methods will be used. Prerequisites: 372-221 and 355-154 or concurrent registration.

130-291 MECHANICS OF SOLIDS II 3 Cr. Stress and strain, torsion, bending of beams, compound stress, principal stress, deflection of beams, statically indeterminate members, and columns. Prerequisite: 130-290.

130-311 TECHNICAL DRAFTING 3 Cr. A comprehensive study of drafting concepts and techniques used by manufacturing industries. The content is technical in nature and it is designed for the learner to understand the graphic language as a means of communication for people in design, assembly, manufacturing, and sales. The learner will attain competencies necessary for him to relate to people using the graphic language of orthographic projection. Prerequisite: 130-110.

130-325 ARCHITECTURAL DESIGN II 3 Cr. Programming and analysis, design solution and presentation and preliminary working drawings for light commercial and/or public buildings. Study of building codes (state and national), construction contract documents, structural materials and systems, building materials and systems and mechanical systems. Prerequisite: 130-221.

130-341 GRAPHIC COMMUNICATIONS PROCESSES 2 Cr. A course designed specifically for the general industrial arts teacher to better enable him to include graphic communications among units of study. Instructional experiences will include: Offset lithography, letterpress, and screen process with appropriate emphasis upon photography. Prerequisite: 130-140.

130-355 LINE AND HALFTONE PHOTOGRAPHY 2 Cr. A study of high contrast photography as it relates specifically to the graphic reproduction processes. Emphasis is upon line, halftone, duo-tone, and special effect film negatives and positives. Prerequisite: 130-140 or consent of instructor.

130-366 IMAGE TRANSFER 3 Cr. Image transfer is a course designed to introduce the concept of printing ink on paper or on other receptors such as plastic, cloth, or glass. It is a study in breadth of lithography, letterpress, gravure, and screen process image carriers, presses, and associated procedures used to transfer an inked image from a carrier to paper. Emphasis is placed on reproducing line and halftone copy, in one or more colors. Experiences are also encountered with step and repeat, multiple imposition, densitometry, ink, paper problems, rollers and quality control. Prerequisite: 130-140 or consent of instructor.

130-370 GENERAL BINDING 2 Cr. Study in-depth of fastening and covering printed materials. Includes mechanical, loose-leaf, wire staple, sewn, and perfect binding methods. Prerequisite: 130-140 or consent of instructor.

130-414A, B or C TECHNICAL ILLUSTRATION 1, 2, 3 Cr. A study of concepts and drafting techniques to illustrate three-dimensional forms. Axonometric drawings are used for the construction and rendering techniques such as stippling, smudge, line, appliques, and airbrushing are utilized. In addition, a unit on perspective drawings culminate the learning activities. Prerequisite: 130-212.

130-433 TOOL AND DIE DESIGN 2 Cr. The study of the design and applications for jigs and fixtures for lathes and mills. The study of milling cutters, lathe tools, boring bars, and gauges for checking work, die design, and punch presses. Prerequisite: 130-311, 372-325.

130-475 PRINTING ECONOMICS 2 Cr. Estimating production costs, specification of equipment, materials inventory and control, and the study of systems which expedite graphic reproductions. Prerequisite: 130-140.

130-513 TECHNICAL RENDERING 2 Cr. The graphic representation of technical information regarding buildings, products, sales literature, and technical manuals which relates to a professional or public audience by utilizing various rendering techniques, medias, and image generation processes.

130-526 BUILDING CONSTRUCTION SPECIFICATIONS 2 Cr. Principles of construction, specification, organization, and the development of basic skills of specification preparation. Demonstration of the role of specifications within the building process and the relationship of the specifications to other construction contract documents.

130-527 TOPOGRAPHY 2 Cr. Calculate and convert previously compiled field work data into usable language for maps, profiles, and land descriptions. Prerequisite: 130-110 and trigonometry.

130-531 MACHINE DESIGN 2 Cr. An introductory survey of machine design, including: Design philosophy and procedure, considerations of material properties, manufacturing processes, stress analysis, and characteristics of major machine elements. Prerequisite: 355-121 or concurrent registration.

130-532 MECHANICAL DESIGN 4 Cr. A study of the design process. Analysis and design of machine elements including gearing, bearings, shafting, and friction devices. Prerequisites: 130-230 or 130-593, 372-325 or 130-291, 355-153 or 355-156.

130-535 GRAPHIC ANALYSIS AND COMPUTATION 2 Cr. The study of fundamental graphical concepts, abstract graphic principles, formulas and equations, vector geometry, and graphical concepts as they apply to modern engineering technology. Prerequisite: 355-153 or 355-156.

130-537 MECHANICAL DESIGN DRAFTING 2 Cr. Design of a machine including: Specifications, layout, calculations, bills of material, detail and assembly drawings. Prerequisite: 130-311.

130-543 GRAPHIC ARTS PRODUCTION TECHNIQUES 2 Cr. Study in depth of letterpress and screen process image transfer machines and associated procedures including printability of varied interceptors. Prerequisite: 130-366.

130-557 COLOR SEPARATION 2 Cr. Study of the nature of color and light. Color separation from reflected and transmission copy. Theory of filters, densitometry, and their relation to color separation. Direct and indirect photographic color separation methods. Prerequisite: 130-355 or consent of instructor.

130-581 FACILITY PLANNING FOR THE HANDICAPPED 2 Cr. Analyze, simulate, and solve problems of the physically handicapped person in the building environment. Utilize basic human engineering knowledge, architectural design methods and media.

130-592 MECHANICS OF MACHINERY I 3 Cr. The study of dynamics as applied to machinery including: rectilinear and curvilinear motion; translation and rotation of a rigid body, force-acceleration equation, impulse and momentum; work, power, and energy balancing and vibration. Prerequisite: 130-290.

130-593 MECHANICS OF MACHINERY II 3 Cr. Graphical and analytical analysis and synthesis of linkages, cams, and gear trains, including displacement, velocity, acceleration, and dynamic forces. Prerequisite: 130-592.

130-615 INDUSTRIAL DESIGN WORKSHOP 2 Cr. Product design from the inception of the idea to marketing the product. Procedure and techniques will be illustrated — some opportunity for laboratory work. Prerequisite: 130-311.

130-629 LAND USE PLANNING 3 Cr. Area planning; problems oriented toward design solutions of building complexes; exterior space, land use, relationships between buildings and supporting facilities. Survey of contemporary regional and city planning and its historical roots. Prerequisite: 130-325.

130-636 COMPUTER ASSISTED DESIGN PROBLEMS 2 Cr. An introduction to the relationship of the computer to drafting and plotted design, design automation, introduction to mechanical design problem analysis for computers, mathematical and simulation models for use in the solution of mechanical design problems. Prerequisites: 354-141 and 130-230.

INDUSTRIAL MANAGEMENT

150-115 UNDERSTANDING INDUSTRY 2 Cr. An introduction to American Industry structures and concepts; history of the project. Systems for structuring knowledge. The concept structure of research.

150-150 INDUSTRIAL ORGANIZATION 2 Cr. Survey of the basic functions and interrelationships of the

major subdivisions of industrial organizations.

150-200 PRODUCTION MANAGEMENT 3 Cr. The manufacturing functions of Industrial Organization are expanded. A broad analytical "systems" viewpoint is used to develop competency in management decision making and problem solving.

150-223 INDUSTRIAL RELATIONSHIPS 2 Cr. Development of the concept area of industrial relationships as related to the elements, associations, incentives and control aspects.

150-230 METHODS ENGINEERING 2 Cr. Introduction to Methods Engineering in business and industry, including better methods, process analysis, activity charting operation analysis, fundamental hand motions, micromotion study, motions economy, human engineering, standardizing job, work organization, paper-work simplification, and value engineering. Prerequisite: 150-150.

150-240 WORK MEASUREMENT 2 Cr. Introduction to Work Measurement techniques in industry including stop watch, work sampling, standard data and predetermined time systems particularly Methods Time Measurement and Master Standard Data, and wage incentive plans. Prerequisite: 150-150.

150-310 PRODUCTION CONTROL 2 Cr. Introduction to industrial plant operations, production planning and control, forecasting, inventory control production requirements, routing, scheduling, dispatching, and follow-up. Prerequisites: 150-200 and 354-130.

150-320 QUALITY CONTROL 2 Cr. General overview of Quality Control including: establishment of quality stand-

ards, inspection principles and organization, control chart theory and application, acceptance sampling, organizing for quality control. Prerequisite: 150-200, 354-130.

150-402 PHYSICAL FACILITIES 2 Cr. A conceptual study of the holdings and possessions of an enterprise necessary to produce a goods and/or service. It is designed to acquaint the students with the methods and techniques utilized by industry in planning, classifying, controlling, maintaining and disposing of property within their possession. The course will permit the students to plan and develop an instructional facility with equipment essential to the understanding and simulation of industrial techniques.

150-410 MANUFACTURING COST ANALYSIS 3 Cr. Introduction to principles of accounting, and concepts and techniques of cost analysis. Emphasis placed on application of cost information. Prerequisite: 160-206.

150-417 FINANCE AND PROCUREMENT IN INDUSTRY 2 Cr. A conceptual study of the considerations and techniques involved in procuring and controlling necessary funds and property essential to organize and operate an enterprise. The course is designed to provide the students with an insight into the location, needs, methods and control of funds and possessions necessary to maintain an enterprise.

150-440 PLANT LAYOUT AND MATERIALS HANDLING 3 Cr. Survey and application of the principles and methods used for solving plant layout and material handling problems. Prerequisite: 150-200.

150-450 MAINTENANCE MANAGEMENT 2 Cr. The organization and management of a facilities maintenance system involving the administration of

maintenance forces, maintenance of personnel, planning and scheduling of work, maintenance of basic environmental systems, project control and cost control for maintenance operations.

150-500 ENGINEERING ECONOMY 3 Cr. Analysis of the source and application of funds, including cost control, valuation, depreciation, replacement theory, and taxation.

150-510 PRODUCTION PROCESSING 3 Cr. Production processes with special consideration to product design as related to economic production. Emphasis on factors which influence the choice and sequence of process to obtain an end product. Prerequisite: 150-200.

150-514 PRODUCTION SYSTEMS 3 Cr. The organization and operation of an industrial company. The selection, designing, production planning, production, marketing and distribution of a product. Prerequisite: 150-115.

150-520 STATISTICAL QUALITY CONTROL 3 Cr. Application of statistics and probability theory in quality control. Emphasis on statistical theory underlying Schewart Control Charts, acceptance sampling plans, and introduction to design of experiment and analysis of variances. Prerequisite: 354-130 or equivalent.

150-530 HUMAN FACTORS ENGINEERING 3 Cr. A survey of the areas of man-machine interface. The physiological and psychological abilities and senses of man will be examined, together with technological advances in the interface areas of control, working performance, reliability, comfort, and safety. (The emphasis will be on effective design of man and work environment as a cybernetic system.) Prerequisite: 479-110, 354-130 or consent of instructor.

150-570 ESTIMATING AND ANALYZING CONSTRUCTION COSTS 3 Cr. This course involves the process of estimating as analyzing material, man-hours, equipment, methods of construction, overhead, and profit and submitting these factors in the form of a bid. Prerequisite: Junior or senior standing.

150-600 ORGANIZATIONAL LEADERSHIP 3 Cr. An overview of the supervisor's role in accomplishing organizational objectives through the management of human resources. Concepts of organizational and individual behavior serve as a foundation for the development of such supervisory skills as communication, motivation, initiating change, discipline, delegation, and handling grievances. Prerequisite: Junior or senior standing.

150-610 INVENTORY MANAGEMENT 3 Cr. A course covering the principles and techniques of ordering, storing, issuing and control of inventory throughout the manufacturing process. Special attention will be focused on the principles and applications of the Economic Order Quantity, the reorder point, safety stock, material movement, warehousing and distribution of the finished product. Prerequisite: 150-200, 150-500.

150-650 INTRODUCTION TO OPERATIONS RESEARCH 3 Cr. Business and industrial application of operations research techniques using linear programming, decision models, and Monte Carlo methods. Problem applications in allocation, sequencing, waiting lines, and competitive strategies. Prerequisite: 150-200.

150-660 INDUSTRIAL MANAGEMENT 2 Cr. Principles and methods of analyzing and solving industrial problems. Application through case studies, management games, and special problems. Prerequisite: Senior standing.

150-670 SYSTEMS APPROACH TO CONSTRUCTION MANAGEMENT 3 Cr. The total concept of the construction industry including the contracting, financing, bidding, planning, organizing, coordinating, and controlling functions and techniques. Prerequisite: Junior or senior standing.

150-x97 FIELD EXPERIENCE 1 Cr. Off-campus work and study in an approved position to better understand how the five environmental and 13 concepts of industry function and interrelate. Prerequisite: 150-115.

150-x98 FIELD EXPERIENCE — AMERICAN INDUSTRY 2 Cr. Off-campus work and study in an approved position to better understand how the five environmental and 13 concepts of industry function and interrelate. Prerequisite: 150-115.

BUSINESS ADMINISTRATION

160-206 PRINCIPLES OF ACCOUNTING 3 Cr. The theory of debit and credit; the underlying principles of the various accounting records; modern business papers; working sheets; the balance sheet and the income statement; the sole proprietorship, the partnership. Prerequisite: Sophomore standing.

160-207 PRINCIPLES OF ACCOUNTING 3 Cr. A development of the basic accounting theory which is introduced in 309-206 including partnership and corporate forms of organization. The elements of branch and manufacturing accounting are included, as well as the introduction to cost accounting, budgeting and the analysis and interpretation of financial statements. Prerequisite: 160-206.

160-210 PRACTICAL MATHEMATICS OF FINANCE 3 Cr. Application of fundamentals of mathematics to business transactions: Interest, annuities, bonds, depreciation, present value analysis, life insurance. Prerequisite: Junior standing.

160-230 SMALL BUSINESS MANAGEMENT 3 Cr. Introduction to the various aspects of business management, especially at the level of small business. Prerequisite: Junior standing.

160-245 BUSINESS DATA PROCESSING 3 Cr. Development of a basic understanding of data processing principles; introduction to business data processing equipment and these principles on the business environment. Prerequisite: 160-206.

160-297 FIELD EXPERIENCE — BUSINESS ADMINISTRATION 2 Cr. A required off-campus experience of approximately 8 weeks in an approved position where the management and/or administrative techniques and policies may be observed and evaluated. Course requirements include weekly summary sheets, a final written report, and an oral seminar. Prerequisite: 160-304 or consent of advisor.

160-304 PRINCIPLES OF BUSINESS MANAGEMENT 3 Cr. Studying in depth the basic managerial functions of planning, organizing, staffing, directing, and controlling, including the principles of management which have universal application to all types of organizations; nature of authority and responsibility, departmentation, line and staff relations; the enterprise manager in his social setting, comparative management, and management and the future. Prerequisite: 320-210.

160-310 COST ACCOUNTING 3 Cr. Cost accounting principles and procedures relating to job order, process, and

standard costing: elements of cost, cost control, and cost reports. Prerequisite: 160-207.

160-318 BUSINESS LAW 3 Cr. Introduction to law, contracts, agency nature and types of negotiable instruments. Prerequisite: Junior standing or consent of instructor.

160-319 BUSINESS LAW II 3 Cr. A continuation of Business Law I; includes security devices, insurance agency, employment, partnerships, corporations, real property, estates and bankruptcy, government and business; a study of the effect of the Uniform Commercial Code on the abovementioned areas of business law.

160-320 INCOME TAX ACCOUNTING 3 Cr. Principles involved in determining taxable net income, and computation of federal and state income taxes for individuals, partnerships and corporations. Prerequisite: 160-206.

160-323 RETAIL MERCHANDISING AND MANAGEMENT 3 Cr. Retail sales promotional techniques and practices with particular emphasis on display, layout, retail and cooperative advertising, mathematics of merchandising. Retail management problems such as store location, types of goods stocked, inventory financing, credit operation, etc. Prerequisite: 160-330.

160-330 PRINCIPLES OF MARKETING 3 Cr. Retail, wholesaling, advertising, channels of distribution, cooperative marketing, pricing, marketing research, and marketing legislation from the standpoint of consumers, middlemen, and manufacturers. Prerequisite: 320-201 or 320-210.

160-334 SALESMANSHIP AND SALES MANAGEMENT 3 Cr. Basic

concepts of selling, including locating prospects, securing and conducting sales presentations, analyzing and handling different types of customers, closing sale, maintaining goodwill. Study of sales organizations with emphasis on recruitment, selection, training compensation, and cost control methods. Prerequisite: 160-330.

160-335 MANAGERIAL ACCOUNTING 3 Cr. Provides students majoring in general business with an understanding of the significance of accounting data without involvement in mechanical techniques. Interpretation of financial statements, internal control, budgeting, costing of products manufactured and sold, analysis of cost-volume-profit decisions. Prerequisite: 160-207.

160-340 BUSINESS FINANCE 3 Cr. Principles governing the planning, raising, and controlling of short and long term funds for a business enterprise, large or small corporate or noncorporate. Financial aspects of promotion and organization, sources of financing and the administration of income; failure and reorganization. Prerequisite: 320-215, 160-207 or consent of the instructor.

160-355 PRINCIPLES OF INSURANCE 3 Cr. Basic principles of risk and insurance and their applications to business management and personal affairs. Analysis of concepts and methods of handling risks; insurance carriers and contracts and underwriting; loss prevention and settlement; government insurance programs. Economic functions of insurance. Prerequisite: Junior standing.

160-370 PRINCIPLES OF ADVERTISING 3 Cr. A survey course presenting the psychological, social, and economic aspects of advertising. Advertising is presented in its relationship to the other factors of distribution

with emphasis on the place of advertising in modern business. Prerequisite: 160-330 or consent of instructor.

160-573 LEGAL ASPECTS OF CONSTRUCTION 3 Cr. An examination of various contracts and documents employed in the building construction industry, and analysis of each including the rights of the parties. A study of labor relations involved in the industry such as law and labor, legality of strikes, picketing and boycott activity, its legality as to economic pressure, unfair labor practices, employer and union, rights and responsibilities of the supervisor and the worker. Prerequisite: 160-318.

160-601 REGULATION OF INDUSTRY 3 Cr. Economic concentration lessening competition or creating a (monopoly) and maintaining competition; changing relationships between government and industry, emphasizing regulatory legislation, administrative agencies, national policies, and social control. Prerequisite: 160-318.

160-679 MARKETING RESEARCH 3 Cr. Experimental and survey techniques used to secure information necessary for successful marketing such as who buys what, when, where, how and why. Primary and secondary sources of information examined. Data collection, compilation, and analysis methods reviewed plus effective communication of conclusions and recommendations to management. Prerequisite: 320-325, 160-330.

160-690 ADMINISTRATIVE AND BUSINESS POLICIES 3 Cr. Integrates the student's previous studies in business, and further develops his ability to deal more effectively with business problems by learning and applying the scientific approach to decision making. Includes business cases on policy formulation and administration, involving the functions of manufacturing, marketing, finance, accounting, person-

nel, and public relations. Prerequisites: 160-304 and senior standing, 160-330, 160-340.

160-x98 FIELD EXPERIENCE — BUSINESS ADMINISTRATION 2 Cr. Off-campus work and study in an approved position to better understand the challenges of being an effective manager. Prerequisite: 160-304 or consent of department chairman.

MATERIALS AND PROCESSES

170-101 PROCESSES: CONCEPTS 3 Cr. Conceptual study, including application, of the area of industrial processes generated by the basics of growing, extraction, conditioning, and combining.

170-201 PROCESSES: MANUFACTURING 3 Cr. A study of the processes that man has developed to convert raw materials into useful goods. Includes a study of a wide variety of industrial production operations. Laboratory experiences provide for the development of sufficient technical knowledge and skill in the basic cutting, forming and fabricating operations that the student will be able to produce products efficiently. Prerequisite: 170-101.

170-202 METALS 3 Cr. Introduction and orientation to the metals field. Equal time in machine shop, welding, foundry, and sheet metal. Exploratory experiences are provided in the four areas with fundamental operations and related technical information.

170-205 DESIGN FOR INDUSTRY 2 Cr. Industrial research and product development experiences focusing on problems related to manual, semi-automatic and automatic production utiliz-

ing various materials and processes will be encountered in this course. The development and application of various systems for selection of materials and processing will be studied. Prerequisite: 170-101.

170-209 GENERAL FINISHING 2 Cr. Technical information and application of finishes to various materials. Color theory, spraying, baking, drying, polishing, spot finishing, and refinishing. Prerequisite: 170-101 or 170-202.

170-222 INDUSTRIAL CERAMICS 3 Cr. An overview of the industrial ceramics field: glass, construction materials, abrasives, whiteware, refractories, enamels, electronic, and nuclear. Laboratory work to correlate applications, material properties and production methods.

170-230 MACHINE SHOP 2 Cr. Basic experiences on the engine lathe, drill press, milling machine, grinder and shaper. Hand tools and related information appropriate to fundamental operation are given. Prerequisite: 170-101 or 170-202.

170-241 MACHINE WOODWORKING 2 Cr. Technical information of wood industry materials and equipment. Job planning, organizing and preparation. Fundamental principles of wood and allied material processing. Prerequisite: 170-101.

170-250 PLASTICS I 2 Cr. A study of the materials and processes of the plastics industry. Technical information on the characteristics and properties of thermoplastic and thermosetting materials and processing equipment. Prerequisite: 170-101.

170-260 SHEET METAL 2 Cr. Fundamental machine and hand tool operations, soldering, pattern development,

and related information. Discussions on materials equipment and supplies. Prerequisite: 170-101 or 170-202.

170-270 LIGHT BUILDING CONSTRUCTION 2 Cr. A study of terminology, materials, tools, and equipment used in the construction industry with emphasis on residential and small commercial structures. Prerequisite: 170-101 or 170-202.

170-280 PACKAGING FUNDAMENTALS 2 Cr. An introduction to the packaging industry. The relationship to marketing and consumer behavior; its control through legal and industrial regulations, the functions as part of the larger organization; packages and their functions, role of the professional packaging manufacturer.

170-304 INDUSTRIAL CRAFTS 2 Cr. Study of craft industries including tool, processes, products from leather, fiber, metal, and wood material. Laboratory work in the use of above materials.

170-307 DIMENSIONAL METROLOGY 2 Cr. A study of the science of measurement, including all aspects of measurement from mechanical systems, such as micrometers, to systems using physical properties such as optical flats — scales, micrometers, verniers, gage blocks, optical flats, and lasers. Prerequisite: 170-101 or 170-202.

170-308 SURFACE COATINGS AND TREATMENTS 2 Cr. Application of color theory, color mixing, painting, graining, stenciling, marbling, mottling, stripping, texturing, dry wall construction, and interior design. Prerequisite: 170-209.

170-310 MATERIALS 2 Cr. Development of the concept area of materials as related to the approach being taken by industry. Students become involved in

selection, utilization and testing different systems. Prerequisite: Permission of staff.

170-313 WOOD TECHNOLOGY 3 Cr. Forest management, structure of wood, properties of wood, defects of wood, modifying wood, bonding wood, testing procedures and trends in wood based industries. Prerequisite: 170-101.

170-315 PACKAGING MATERIALS 3 Cr. A study of the origin, composition, properties, and applications of packaging materials. Lab problems relating to standard materials testing methods. Prerequisite: 170-280.

170-331 MACHINE SHOP 2 Cr. Advanced shop practice; sharpening of lathe tools, twist drills, milling cutters, taper turning, grinding externally and on flat surfaces. Gear cutting on milling machine. Heat treating and layout techniques. Prerequisite: 170-230 or consent of instructor.

170-333 MACHINE SHOP III 2 Cr. Spiral milling, tool making, and cutter grinding, cylindrical grinding, maintenance. Prerequisite: 170-331 or consent of instructor.

170-344 CABINET WORK I 2 Cr. Problem solving, testing of materials, and advanced technical information. Construction of a major cabinetmaking project. Prerequisite: 170-241.

170-346 GENERAL WOODWORKING 2 Cr. General unit shop organization, upholstery and wood turning. Experience in organization and presentation of content in woodworking as it relates to the total industrial arts program. Prerequisite: 170-101.

170-357 PATTERNMAKING-FOUNDRY PRACTICE 3 Cr. Patterns

for metal castings are designed, constructed, and molded. Foundry practices utilizing various patterns and foundry techniques are experienced in the production of metal castings. Prerequisite: 170-101 or 170-202.

170-360 PATTERN DRAFTING 2 Cr. Advanced pattern development involving parallel line, radial line, and triangulation. Advanced shop practice. Care and maintaining of equipment. Prerequisite: 170-260 or consent of instructor.

170-365 WELDING I 2 Cr. Fundamentals of electric arc and oxy-acetylene welding processes in the flat position; manufacture and handling of gases; selection and types of equipment; routine maintenance; types of electrodes, coatings applications. Prerequisite: 170-101 or 170-202.

170-370 COMMERCIAL BUILDING 2 Cr. A study of structural building systems and related mechanical installations. Prerequisite: 170-270.

170-372 HEATING AND AIR-CONDITIONING 3 Cr. Principles of heating, heat energy, heating system, calculation of heating loads, heating drawings, burners, and control systems.

170-380 PACKAGING SYSTEMS 3 Cr. The study of packaging from the design phase through production. Lab work on structural design, sample making and package evaluation. Prerequisite: 170-280.

170-409 CRAFT TECHNOLOGY WORKSHOP 2 Cr. Learning experiences that foster self-sufficiency through the design and construction of a functional product. Basic technical skills and knowledge will be developed through hands-on experiences.

170-435 GUNSMITHING 2, 3, 4, 5, 6 Cr. This is an elective course where the student signs a study contract for an area of work agreed upon by the student and the instructor. All work must meet safety and quality standards currently used by the Firearms Industry.

170-460 METAL FORMING AND FABRICATION 2 Cr. Cabinet work involving direct layout with extensive work on the cornice and press brake. Spot welding. Discussion on selection and purchasing of supplies. Prerequisite: 170-260 or consent of instructor.

170-465 WELDING II 2 Cr. Advanced work in arc and oxy-acetylene welding techniques; vertical, horizontal, overhead positions; destructive and non-destructive testing; MIG and TIG welding processes; oxy-acetylene machine and air carbon arc cutting. Prerequisite: 170-365.

170-480 PACKAGING DESIGN AND EVALUATION 3 Cr. Discussions on the chemical and physical protection problems. Package design with reference to materials, structure, graphics, and regulations. Package evaluation in terms of shock and vibration forces. Practical applications of evaluation using electronic instrumentation. Prerequisite: 170-380.

170-501 TECHNOLOGY - RESOURCES - ENVIRONMENT 2 Cr. A problem solving course which will show our present and probable future position with respect to known available resources. The relationship between rate of resource use and environmental degradation will be demonstrated, and possible consequences of our present resource consumption patterns will be considered. A pursuit of ecologically sound resource consumption patterns, more appropriate to the presently known available resources will be conducted.

170-502 SOLID WASTE TECHNOLOGY 3 Cr. A study of solid wastes and the technology available for processing them, with emphasis on recovering some economic benefits.

170-506 MAINTENANCE OF PROCESSING EQUIPMENT 3 Cr. Recondition hand and power woodworking and metalworking equipment. Identify and correct malfunctions commonly encountered with such equipment. Information on manufacturers performance specifications, technical data on cutting tool specifications, and preventive maintenance schedules. Criteria for the selection of hand tools, power equipment, measuring instruments, and safety devices.

170-507 METRIC AMERICA 1 Cr. An in-depth study of the international (SI) metric system with special emphasis on SI terms, units, standards, and the development of concepts of the metric units of mass volume, and length. Metric measuring instruments will be used, and methods of teaching the SI metric system will be discussed.

170-510 INDUSTRIAL MATERIALS 4 Cr. A broad technical study of common industrial materials normally dealt with and used for a multitude of industrial and domestic applications. The study of materials will begin with a review of the structure of matter continuing then to consider the material families for common properties and significantly different characteristics. Prerequisite: Chemistry

170-515 METALLURGY 3 Cr. Properties of crystalline solids, production of iron and steel, the carbon-iron equilibrium diagram, principles of heat treatment, properties of ferrous alloys. Production, properties, and theory of the most important non-ferrous metals and alloys. Prerequisite: 311-115.

170-535 DIE AND MOLD MAKING 3 Cr. Technical requirements for designing and fabricating tools, dies and molds for production applications. Prerequisite: 170-331.

170-537 NUMERICAL CONTROL IN MANUFACTURING 1-3 Cr. An investigation of numerical control of machine tools, justification of numerical control, types of control units and systems, feedback systems, manuscript writing and manual programming, tape punching and machine set up, fixture design and tool setting. A working knowledge of the basic machining processes is recommended. Prerequisite: 170-101 or 170-202.

170-550 PLASTICS II 2 Cr. Technical information relating to plastic materials and to tooling design for plastics. Product development with emphasis on experimental design in tooling and quality control. Prerequisite: 170-250.

170-555 PLASTICS SEMINAR 2 Cr. This course is structured in a manner which will provide industrial arts teachers in the field with the necessary technical information and skills to enable them to introduce industrial plastics into their industrial arts program.

170-559 FOUNDRY SEMINAR 1-2 Cr. Metallurgy principles relating to casting processes; sand testing, phasing diagrams, fluid mechanics, gates, risers, gating systems, inspection, non-destructive testing.

170-570 MECHANICAL SYSTEMS 2 Cr. Plumbing and electrical requirements for residential and commercial buildings. Prerequisite: 170-370.

170-575 BUILDING CONSTRUCTION PRACTICUM 2-4 Cr. Technical information and problems involving construction and the actual develop-

ment of a light residential structure. Prerequisite: 170-270.

170-580 PACKAGING DEVELOPMENT 3 Cr. Applications of the packaging functions. Taking a product and developing its complete packaging system from final production of the product on through until it reaches the ultimate consumer. Prerequisite: 170-480.

170-585 PACKAGING SEMINAR 2 Cr. Discussions on the current packaging problems or developments. Choice of problems based upon student interests and current issues. Prerequisite: Junior or senior standing.

170-637 NUMERICAL CONTROL II: PROGRAMMING FOR CONTINUOUS PATH CONTROLS 3 Cr. Application of the computer for generating programs to machine curved, non-symmetrical surfaces. Involves mathematical concepts of N/C. Interpolation of surfaces between points by straight line or logarithmic methods, writing computer programs and proving problems. Field trips to industries using numerical control equipment. Prerequisite: 170-537.

INDUSTRIAL TEACHER EDUCATION

190-160 INTRODUCTION TO INDUSTRIAL EDUCATION 1 Cr. An introduction to current programs, facilities, and opportunities in teaching American Industry, industrial arts, vocational, technical and adult education. Different kinds of programs will be examined as to their purpose in the field of education. Students will develop personal plans and goals in relation to the future direction of these programs.

190-205 METHODS OF TEACHING INDUSTRIAL EDUCATION 2 Cr. Study of teaching methods in use in youth and adult shop classes. Instruction planning; lesson presentations with video tape equipment; methods of organization and management; instruction aids; professional ethics. Prerequisite: 190-160.

190-404 CURRICULUM DEVELOPMENT 5 Cr. Development of an orderly procedure for the identification of concepts; generalizations and instructional units to be used in teaching. Course outlines, analysis of content, lesson planning, evaluation, management. Prerequisite: 190-205, 421-303.

190-408 STUDENT TEACHING 8 Cr. Directed teaching and community experiences in selected off-campus schools. Prerequisite: 190-404, overall grade point average of 2.25. Satisfactory health, speech and English.

190-488 INTERNSHIP TEACHING 8 Cr. An alternate method of obtaining student teaching experience. Teacher interns receive a license to teach and salaried appointments in cooperating school systems for one full semester. Prerequisite: 190-404.

190-500 EVOLUTION OF TECHNOLOGY 2 Cr. In studying contemporary technology there is a need to understand how things got to where they are, and where they might go from here. This will provide a broad look at relationships between mechanical and social inventions and the role technology plays in human and institutional behavior.

190-505 SCHOOLFLIGHT WORKSHOP 1-3 Cr. Organizational patterns, available alternatives, and recommended procedures for incorporating full-scale aircraft construction in schools.

190-525 INDUSTRIAL ARTS FOR ELEMENTARY TEACHERS 2 Cr. Development, philosophy, objectives, and course organization for industrial arts for the elementary schools. Suitable laboratory work in woods, metals, plastics, and drawing.

190-533 SHOP PLANNING AND EQUIPMENT SELECTION 2 Cr. Principles of school shop planning including equipment selection and placement, plus selection, care, and arrangement of supplies. Prerequisite: 190-404 or equivalent.

190-600 RATIONALE FOR AMERICAN INDUSTRY 2 Cr. A study of the place and function of American industry in the total school curriculum.

190-606 LEARNING ACTIVITIES IN INDUSTRIAL AND VOCATIONAL EDUCATION 2 Cr. A study and design of learning activities for industrial and vocational education. Learning activities will be developed on selected levels of the cognitive, psychomotor, and effective domains to carry out stated behavioral objectives. An evaluation of the appropriateness of learning activities as presented in contemporary curriculum projects.

190-637 SCHOOL SHOP ORGANIZATION AND MANAGEMENT 2 Cr. Experience in administration, project development and teaching problems associated with industrial education. Prerequisite: 190-205.

190-638 COURSE CONSTRUCTION 2 Cr. Directed experience in curriculum development and course of study construction for industrial education teachers. Experiences in developing behavioral objectives and in the development of instructional materials which will lead to the realization of these objectives. A vehicle of instruction will be the

development of a course of study, instructional package, and/or unit of instruction.

HOME ECONOMICS

200-681 PROBLEMS IN HOME ECONOMICS 2 Cr. This course will deal with special problems in-depth as initiated by an instructor or according to student needs and interests. This course should serve as a culminating educative experience for students in the various areas of home economics. Prerequisite: Consent of instructor.

200-698 NATIONAL STUDY TOUR IN HOME ECONOMICS 1-3 Cr. Group membership limited to 20 and majors of the particular area to be studied have priority. Study visit to a major United States city relating student's learning in his major area to business and industry. Prerequisite: Consent of instructor.

HUMAN DEVELOPMENT AND FAMILY LIVING

212-100 INTRODUCTION TO EARLY CHILDHOOD PROGRAMS 1 Cr. Introduction to history and types of programs for young children and staff requirements in early childhood professions.

212-124 CHILD DEVELOPMENT I 3 Cr. A developmental study of the child from conception through adolescence, including physical, intellectual, social and emotional growth. Observation required.

212-160 LEARNING ENVIRONMENTS FOR YOUNG CHILDREN 1-2 Cr. Establishment and maintenance of safe and healthy learning environments for young children. Credit determined by pre-assessment.

212-161 FACILITATING PHYSICAL AND INTELLECTUAL COMPETENCE IN YOUNG CHILDREN 1-2 Cr. Methods of facilitating physical and intellectual competence in young children. Credit determined by pre-assessment.

212-162 FOSTERING SELF GROWTH IN YOUNG CHILDREN 1-2 Cr. Building self concepts and individual strengths in young children. Credit determined by pre-assessment.

212-163 ADULT-CHILD INTERACTION 1-2 Cr. Organizing and sustaining the positive functioning of children and adults in a learning environment. Credit determined by pre-assessment.

212-164 COORDINATION OF HOME AND CENTER CHILD-REARING PRACTICES 1-2 Cr. Coordination of home and center child-rearing practices and expectations. Credit determined by pre-assessment.

212-165 SUPPLEMENTAL SERVICES COORDINATION 1-2 Cr. Carrying out supplementary responsibilities related to children's programs. Credit determined by pre-assessment.

212-204 INTRODUCTION TO REACHING EARLY CHILDHOOD EDUCATION 3 Cr. An introduction to early childhood education, program management, classroom arrangement, guidance principles, sensory stimulation, enhancement of self, and creative expression with young children. Prerequisites: 212-264 and 212-124.

212-235 CHILD DEVELOPMENT LABORATORY 1 Cr. Observations in the Child and Family Study Center or similar center culminating in a personality study of a child. Prerequisite: 212-124.

212-250 FAMILY RELATIONSHIPS I 3 Cr. Dynamics of social-psychological forces affecting family interaction. Explorations of courtship, husband-wife, parent-child relationships.

212-251 EARLY YEARS OF MARRIAGE 1 Cr. Presentation and evaluation of adjustments, goals and processes of the early years of marriage.

212-255 FAMILY LIVING (EMR) 3 Cr. Marriage and family relationships for teachers of secondary educable mentally retarded.

212-264 CHILD GUIDANCE 2 Cr. Study of principles relevant to guidance of children. Evaluation of literature and application of studies to children. Observation experiences in the study of young children.

212-265 CHILD GUIDANCE LABORATORY 1 Cr. Supervised participation in the Child and Family Study Center or similar center with emphasis on guidance techniques and understanding of children. Prerequisite: 212-264.

212-303 CURRICULUM I: LANGUAGE ARTS AND SOCIAL SCIENCES IN EARLY CHILDHOOD EDUCATION 2 Cr. Development of methods and techniques necessary for teaching language arts and social studies to young children with particular emphasis placed on effective social and communications skills and experiences. Prerequisite: 212-204.

212-324 CHILD DEVELOPMENT II 3 Cr. An empirical study of the physiological, intellectual, social and emotional development of children. Prerequisites: 212-124 and 212-264.

212-333 CURRICULUM II: SCIENCE AND MATHEMATICS IN EARLY CHILDHOOD EDUCATION 2 Cr. Directed study for the application of skills in order to teach mathematics and science concepts appropriate for early childhood education, including organization and presentation of teaching-learning experiences for children in early learning situations. Prerequisite: 212-204.

212-342 CREATIVE ACTIVITIES FOR YOUNG CHILDREN 3 Cr. Curriculum, methods and materials, related to music, art, and creative movement activities for the young child. Prerequisite: 212-124 or 212-264.

212-350 FAMILY RELATIONSHIPS II 3 Cr. A study of the family with emphasis on environmental factors significant in marriage and family relationships. Prerequisite: 212-250.

212-351 DEATH AND THE FAMILY 1 Cr. Presentation and discussion of current literature concerning how families deal with the death of a member. In particular, this course is oriented toward how adults can aid children to cope with the death of a family member, but it is also concerned with how other members of the family deal with the death of older as well as younger family members.

212-352 PARENTHOOD 1 Cr. Presentation and evaluation of current knowledge concerning parenthood. Effects of parenthood on parents.

212-354 THE SINGLE PARENT FAMILY 1 Cr. Description, including

statistical trends, of single-parent families, and problems involved.

212-407 PARENT EDUCATION 2 Cr. A study of parent groups, the training of parent-group leaders, a survey of the literature in this field. Practicum with parent groups. Prerequisite: 212-264.

212-408A STUDENT TEACHING IN EARLY CHILDHOOD CENTERS 4 Cr. Directed teaching and community experience in selected early childhood centers. Prerequisite: 212-333

212-408B STUDENT TEACHING IN KINDERGARTEN 4 Cr. Directed teaching and community experience in selected kindergartens. Prerequisite: 212-303.

212-409 CLINICAL SEMINAR IN CHILD DEVELOPMENT PROGRAMS 1/2 Cr. Seminar-concurrent-with student teaching experience in the Child and Family Study Center or other preschool program.

212-411 CLINICAL SEMINAR IN KINDERGARTEN EDUCATION 1/2 Cr. Seminar held concurrently with Student Teaching in the Kindergarten.

212-433 READING IN EARLY CHILDHOOD EDUCATION 2 Cr. A study and evaluation of current philosophies, methodology, and materials in the teaching of reading with special emphasis on readiness activities and beginning reading in early childhood. Prerequisite: 212-333.

212-451 DIVORCE 1 Cr. Evaluation of the fact of divorce and divorce trends as a part of the family system in America. Prerequisite: 212-250.

212-488 INTERN TEACHING 8 Cr.

An alternate method of obtaining student teaching experience. Teacher interns receive license to teach and salaried appointments in cooperating school systems for one full semester. Prerequisite: 212-333.

212-535 SEMINAR ON SELF-GROWTH 2 Cr. A seminar based on a study of theories of the self. Exploration of selected aspects of self-development and actualization. Prerequisite: 212-324 or 212-350.

212-541 HOME INTERVENTION PROGRAMS IN EARLY CHILDHOOD PROGRAMS 1 Cr. Planning, supervising, and implementing a home intervention program for young children and their families.

212-545 PRESCHOOL PROGRAMMING FOR THE MENTALLY HANDICAPPED 2 Cr. Program development and implementation for preschool mentally handicapped children. Prerequisite: Consent of department.

212-553 DUAL CAREER FAMILIES 1 Cr. The dual career marriage as a form of family life; benefits and problems encountered.

212-580 FUTURE OF THE FAMILY 1 Cr. Evaluation of experimental and utopian forms of the family and study of the future of the family.

212-581 DYNAMICS OF MARITAL INTERACTION 2 Cr. Patterns of husband-wife power distribution, task differentiation, decision making, communication, role adaptation, and marital satisfaction over the family life cycle. A theoretical analysis of marital behavior within the family as a social system. Prerequisite: Consent of instructor.

212-598 AMERICAN STUDY TOUR

IN CHILD DEVELOPMENT 2 Cr. Study tour of child development centers. Discussions and lectures by leaders in the field of child development. Prerequisite: Consent of instructor.

212-607 PARENT COUNSELING 2 Cr. Various approaches and techniques of working with parents. Observation and experience with problems parents face in childrearing. Prerequisites: 212-124 and 212-264.

212-624 ADVANCED CHILD STUDY 3 Cr. A study of principles and review of literature pertaining to children. Prerequisites: 212-124 and 212-264.

212-626 SPECIAL TOPICS IN THE STUDY OF FAMILY LIFE 3 Cr. A review of programs and literature related to family life with opportunity for individual study of problems of personal or professional interest. Prerequisite: 212-350.

212-637 SEMINAR IN CHILD DEVELOPMENT 2 Cr. Exploration in depth of special problems and aspects in child development field with preference given to student's interest. Prerequisite: Consent of instructor.

212-650 INTRODUCTION TO MARRIAGE AND FAMILY COUNSELING 3 Cr. Conceptual frameworks and approaches to marriage and family counseling. Prerequisite: Consent of instructor.

212-651 MARRIAGE AND FAMILY COUNSELING SEMINAR 3 Cr. The understanding of application of basic counseling techniques to premarital, marital, family and couples-group counseling under supervision of professional marriage and family counselor. Prerequisite: 212-650 or consent of instructor.

212-653 COUPLES COMMUNICATIONS TRAINING 2 Cr. Communication theories and findings will be applied to the area of marriage and family relationships. It will involve an intensive examination of the Minnesota Couple's Communications Program. Prerequisite: Consent of instructor.

212-660 CURRENT SEX RESEARCH 1 Cr. Overview and evaluation of current research concerning human sexual behavior and attitudes. Prerequisite: 212-250.

212-664 PROBLEMS IN EARLY CHILDHOOD CURRICULUM 1-3 Cr. Philosophy and methodology of Early Childhood Education with emphasis on problems confronting teachers in this area. Prerequisite: 212-303.

212-665 ADMINISTRATION OF EARLY CHILDHOOD EDUCATION PROGRAMS 2 Cr. A study of program organization, program design, staffing, licensing, certification, equipment and facilities for operating Early Childhood Education programs. Field trips required. Prerequisite: 212-408B.

212-680 AGED PERSON AND HIS FAMILY 1 Cr. Study of the characteristics and needs of aged members of the society with emphasis on the intergenerational relationships of family members.

212-685 SEMINAR ON THE CULTURALLY DISADVANTAGED CHILD AND FAMILY 3 Cr. Study of problem, needs, related research and current trends to assist the disadvantaged child and family toward fuller actualization of potentialities for self and society. Prerequisite: 212-324 or 212-350.

APPAREL, TEXTILES AND DESIGN

214-110 MALE-FEMALE APPAREL 1 Cr. A study of the elements and organization of design as they relate to contemporary apparel for men and women.

214-117 CLOTHING AND BEHAVIOR 1 Cr. A study of the function of clothing and how culture, society and the individual influence clothing choices.

214-120 INTRODUCTION TO FASHION MERCHANDISING 2 Cr. Introduction to the field of fashion merchandising with an emphasis on the professional development, personal qualities, professional publications and the standardization of ready-to-wear garments.

214-140 TEXTILES 3 Cr. Fibers, yarns, fabric construction, finishes, and design as applied to the selection of clothing and household fabrics.

214-225 CLOTHING AND TEXTILE INDUSTRY 3 Cr. The clothing and textile industry, its organization, promotion methods, and the interrelationship of the major factors of industry and its markets. Prerequisite: 214-140.

214-260 BASIC APPAREL FOR THE EMR 3 Cr. For secondary special education majors concerned with selection, care, repair, and storage of personal clothing. Construction of a garment or other textile project.

214-266 APPAREL CONSTRUCTION 3 Cr. A study of apparel construction theory, principles of fitting and their application to the construction of garments. It is recommended that Textiles be taken prior to this course.

214-270 INTRODUCTION TO MENSWEAR CONSTRUCTION 1 Cr. Orientation to the construction of menswear. Open to men and women with limited or no experience in construction. This course may not be taken for credit after 214-266.

214-298 FIELD EXPERIENCE — FASHION MERCHANDISING 2 Cr. Off-campus work and study in an approved position to better understand the challenges and potentials of various careers in the merchandising area. Prerequisite: 214-120.

214-319 ECONOMICS OF CLOTHING 3 Cr. Analyzation of garments or products for making discriminating choices in relation to desired use.

214-325 FASHION MERCHANDISING I 3 Cr. Merchandising with application of fundamentals for selling, buying and marketing procedures. Prerequisite: 214-120.

214-326 PROFESSIONAL MINI ENCOUNTER .5 Cr. In store observation and participation with specific executive personnel for two-day periods. Prerequisite: 214-298 and 214-325 or concurrent with or equivalent.

214-329 FASHION MERCHANDISE PROMOTION 2 Cr. Practical application of the procedures involved in the promotion of fashion merchandising, display, oral and written promotional communication and publicity. Prerequisite: 214-325.

214-370 CONSTRUCTION OF MENSWEAR 3 Cr. Application of recent techniques in the construction of menswear. Prerequisite: 214-266 or 214-270.

214-400 SELF PRESENTATION IN BUSINESS .5 Cr. Provide an opportu-

nity for the student to become aware of and to practice the skills relative to self presentation in the business and professional world.

214-402 UNDERGRADUATE CLOTHING AND TEXTILE RESEARCH 2 Cr. Individual investigation in one specific field of interest within clothing and textiles. Opportunity to correlate clothing and textiles with related fields.

214-426 FASHION MERCHANDISING PRACTICUM 3 Cr. Observation and structured experience in merchandising procedures dealing with the complete operations and management in a retail establishment. Prerequisite: 214-325, 214-329 or consent of instructor.

214-429 TEXTILE ECONOMICS 2 Cr. Textile market conditions. Patterns of textile consumption in business and industry, and their indirect relationship to the individual and family. Prerequisites: 214-225, 320-210 and 320-215.

214-430 MERCHANDISE PLANNING AND CONTROL 2 Cr. Techniques of merchandising the fashion department including: budgeting the merchandise dollar; planning the merchandise assortment, managing inventory; buying for resale. Prerequisite: 214-325 or consent of instructor; one math course.

214-466 COUTURE TECHNIQUES 2 Cr. Application of couture techniques to apparel and experimentation with unusual fabrics. Prerequisite: 214-266.

214-540 TEXTILE SCIENCE 3 Cr. Structural aspects of textile fibers and fabrics related to physical properties of textiles. Application and evaluation of dyes, finishes, and soil removal agents. Fiber analysis through solubility and microscopic appearance. Prerequisite: 214-140.

214-545 TEXTILES FOR INSTITUTIONS 2 Cr. Raw materials, fabric structures, specifications and legislation related to quality, performance and maintenance of textiles for institutional uses.

214-566 APPAREL CONSTRUCTION — KNIT AND STRETCH FABRICS 2 Cr. A study of the principles of knit and stretch sewing and their application in the construction of garments. Prerequisite: 214-266 or consent of instructor.

214-580 FLAT PATTERN 3 Cr. A study and application of the techniques of pattern designed through drafting methods. An original garment is designed and constructed. Prerequisite: 214-266.

214-590 PRACTICUM IN TEXTILE DESIGN 3 Cr. An exploratory course devoted to the use of the following textile design techniques as a means of artistic expression: stitchery, weaving, knotting, applique and hooking. Emphasis will be placed on good design and creativity. Prerequisite: 304-101.

214-592 PRACTICUM IN TEXTILE PRINTING 2 Cr. Exploring use of textile design techniques — primarily silk screen, tie dye, printing, and batik. Emphasis will be placed on good design and creativity. Prerequisite: 304-101.

214-605 EUROPEAN STUDY TOUR 3-6 Cr. Tour of European centers of art, clothing, and textiles. Study of the cultural patterns. Program includes lectures by consultants and seminars on the various phases of the fashion and fabric industries.

214-610 HISTORY OF COSTUME: ANCIENT TO EUROPEAN 1900 3 Cr. Development of costume throughout the ages. Fashion as it reflects the cultures of the past and influences present-day costume.

214-611 HISTORY OF AMERICAN COSTUME 2 Cr. American costume as it evolved from colonial to contemporary times with emphasis on costume characteristics and social, political, religious and cultural influences.

214-617 SOCIAL-PSYCHOLOGICAL ASPECTS OF CLOTHING 3 Cr. The social significance of clothing to an individual and the influence it has upon his behavior.

214-625 FASHION MERCHANDISING III: MASS MERCHANDISING 3 Cr. History, planning, design and techniques of mass merchandising as related to shopping centers, discount stores, and franchised and leased operations. Prerequisite: 214-325.

214-639 NATIONAL STUDY TOUR TO FASHION INDUSTRY 1 Cr. Five day visit in New York City (or alternate city). Program will involve study hours, discussions, and lecture by leading people in American fashion market. Prerequisites: Junior, senior, graduate, and consent of instructor.

214-640 TEXTILE EVALUATION 2 Cr. Problems involving fiber identification, fabric performance, and fabric care. Chemical and microscopic testing procedures. Investigation methods for gathering and interpreting data. Individual problems. Prerequisite: 214-140.

214-645 UNITED STATES TEXTILE STUDY TOUR 2 Cr. Tour of the textile industries in the United States. Includes professional visits, lectures and discussions by consultants in the textile field. Prerequisite: Upper division or graduate standing.

214-655 RECENT DEVELOPMENTS IN CLOTHING AND TEXTILES 2 Cr. Various areas of apparel and textiles are explored in light of new develop-

ments in these and related fields. Prerequisites: 214-140 and 214-266 or consent of instructor.

214-666 TAILORING 3 Cr. Application of tailoring techniques in making suits and coats. Prerequisite: 214-266.

214-680 DRAPING 3 Cr. Application of draping principles in the designing and construction of garments. Emphasis on creativity. Prerequisite: 214-266.

214-681 APPAREL DESIGN - DRAPING 1 Cr. Apparel design through the advanced techniques of draping. Emphasis on the individuality and on fabrics of interesting textures and design. Prerequisite: 214-680.

214-682 APPAREL DESIGN - FLAT PATTERN 1 Cr. Draft a master pattern for self and develop paper patterns from a master pattern from given and self designed garment sketches that incorporate advanced techniques. Construct garments from the evolved patterns. Prerequisite: 214-580.

214-690 ADVANCED TEXTILE DESIGN — STITCHERY 1 Cr. Exploration in depth of the creative potentials of specific areas in textile design - stitchery - applique. Prerequisite: 214-590.

214-691 ADVANCED TEXTILE DESIGN — NON-LOOM 1 Cr. Exploration in depth of the creative potentials of specific areas in textile design: non-loom interlacing thread techniques (spring, macrame, netting, knitting, crocheting). Prerequisite: 214-590.

214-692 ADVANCED TEXTILE DESIGN — HOOKING 1 Cr. Exploration in depth of the creative potentials of specific areas in textile design - hooking - rya. Prerequisite: 214-590.

214-693 STRUCTURAL DESIGN AND WEAVING 2 Cr. A studio course involving experiences in weaving and other structural techniques. Prerequisites: 304-101, consent of instructor.

214-694 ADVANCED WEAVING STUDIO 2 Cr. Advanced study and experiences in complex hand weaving techniques. Focus on block theory, pile constructions, leno techniques, and double cloth. Individual exploration encouraged. Prerequisite: 214-693 or equivalent.

214-695 DECORATIVE FABRICS 2 Cr. Study of historic and contemporary fabrics with analysis of designs and techniques of decorating fabrics. The contribution of decorative fabrics to the enrichment of human experience.

214-x98 FASHION MERCHANDISING FIELD EXPERIENCE 2 Cr. Off-campus work and study in an approved position to better understand the challenges and potentials of various careers in the merchandising area. Prerequisite: 214-225 or 214-120.

FOOD SERVICES AND NUTRITION

229-101 DIETETICS AS A PROFESSION 1 Cr. Identification of the types of dietetic and food service administration programs in the United States. The role and function of staff in each. Professional literature in the field.

229-124 FOODS 4 Cr. Scientific principles and application in the selection, preparation and service of food.

229-136 FOOD FOR YOUNG CHILDREN 1 Cr. Food needs of infants and young children, designed for early

childhood education majors. Not applicable for students with credit in 229-212.

229-202 FUNDAMENTALS OF NUTRITION 2 Cr. Basic principles of applied nutrition. A study of nutritional, sociopsychological, physiological and environmental factors related to the dietary patterns of people throughout the world. Not applicable for students in Home Economics Education, Dietetics, Home Economics in Business, Food and Nutrition, nor those with credit in 229-212.

229-205 NUTRITION FOR WEIGHT CONTROL 2 Cr. Basic principles of nutrition as related to the physical stamina, mental alertness and emotional stability of individuals undergoing weight modification.

229-210 FOOD MANAGEMENT 3 Cr. Management of the selection, preparation, and service of food with adaptation to patterns of living.

229-212 NUTRITION 3 Cr. Principles of human nutrition and application in the selection of food for members of the family group.

229-220 OUTDOOR COOKING 1 Cr. Food preparation principles as applied to cooking and serving outdoors. Study of equipment used in outdoor food preparation. Investigation of foods for camping, backpacking, and canoe camping. Sections on preparation of wild game and on gathering and preparation of wild foods.

229-240 FOOD SCIENCE 4 Cr. Study of physical and chemical changes as they affect the selection, preparation and service of food. Prerequisite: 311-201.

229-260 MENU PLANNING AND DESIGN 2 Cr. The principles of menu planning, design, and production for commercial and institutional food establishments.

229-305 BAKING PROCESS (A) YEAST BREADS (B) CAKES (C) QUICK BREADS (D) PASTRY AND PASTAS 1 Cr. The art and science of baking with reference to home and industrial methods. Course may be repeated for different subunits.

229-318 MEAL MANAGEMENT PRACTICUM 2 Cr. Practical applications and problem solving using principles of food economics, meal management, and food service for family-sized consumer groups. Prerequisites: 229-124, or 229-240, 229-212.

229-404 FOOD SERVICE MANAGEMENT FOR CHILD DEVELOPMENT CENTERS. 2 Cr. Administration of food service for preschool children in centers, with consideration of individual needs and emotional reactions to food, meal planning, purchasing, receiving and storage, principles of food preparation and service, and equipment.

229-405 FOOD SERVICE PRACTICUM FOR CHILD CARE CENTERS 1 Cr. Application of food management principles for directors of child care centers. Personnel management; menu planning; recipe selection, standardization and adjustment; food purchasing and storage; food production and service; equipment use; sanitation and safety; and nutrition education in a day care setting. Prerequisite: 229-404.

229-410 ADVANCED NUTRITION 3 Cr. Principles of human nutrition applied to individual, family, community, and world problems. Prerequisites: 229-212, 311-511.

229-446 FOOD PRESERVATION 1 Cr. Principles and practical application of methods of food preservation and storage.

229-514 FOOD AND INDUSTRY 2 Cr. Broad concepts of the interrelationship between properties of raw food materials and methods of processing in the food industry.

229-606 NUTRITION EDUCATION 2 Cr. Nutrition education as planned behavioral change with emphasis on problems and solutions used in instructing various populations. Identification, development, and evaluation of nutrition resources. Prerequisite: 229-212, 242-201.

229-608 ADVANCED MEAL MANAGEMENT PRACTICUM 2 Cr. Individualized problem solving of critical incidences in meal management: variations of meal service for entertaining, meals at different economic levels, use of specialized equipment in meal preparation and service, and other interrelated problems. Prerequisite: 229-318.

229-618 DIET THERAPY 3 Cr. Principles and methods for the use of diet as a therapeutic measure in certain pathological conditions. Prerequisite: 229-410.

229-620 FOOD STYLING AND CREATIVE COOKERY 2 Cr. Food as media for artistic expression. Effective use of color, form and texture in food styling.

229-631 READINGS IN FOOD SCIENCE AND NUTRITION 2 Cr. Critical reading, evaluating, and reporting from pertinent current journals and other publications.

NUTRITION 3 Cr. Application of basic knowledge to maternal, infant, child, and adolescent nutrition. Prerequisites: 229-212 and 308-132.

229-638 EXPERIMENTAL FOODS 3 Cr. Experimentation with selected food materials, techniques, and equipment. Opportunity for directed study in an individually chosen area. Prerequisites: 229-124 or 229-240, 311-201.

229-642 ADVANCED FOODS 2 Cr. Comparative studies of food selection and preparation; appraisal of foods. Prerequisite: 229-124 or 229-240.

229-661 SOCIAL AND CULTURAL ASPECTS OF FOOD 2 Cr. Social, economic, and cultural influence on man's food patterns. Prerequisite: Senior standing.

229-665 EUROPEAN FOODS STUDY TOUR 3 or 6 Cr. Tour to study cultures, food patterns, and different phases of food industries in Europe.

HUMAN DEVELOPMENT AND FAMILY LIVING

242-101 EXPERIENTIAL LEARNING IN HOME ECONOMICS 1 Cr. Analysis of the contribution of Home Economics education in the development of individuals and families and identification of the responsibilities of a professionally trained home economist.

242-201 TEACHING TECHNIQUES IN HOME ECONOMICS 2 Cr. Study of teaching techniques and skills for home economics learning experiences in relation to classroom organization and objectives.

229-633 MATERNAL AND CHILD

242-240 CLINICAL EXPERIENCE IN

MICRO-TEACHING 1 Cr. Video-taped micro lessons with micro classes will be reviewed for self evaluation and critique with instructor.

242-241 CLINICAL EXPERIENCES IN THE COMMUNITY 1 Cr. Plan and implement home economics learning experiences for children and adults in community programs.

242-301 HOME ECONOMICS CURRICULUM 3 Cr. Development of curriculum to meet the needs of students in Home Economics programs. Prerequisite: Junior or senior standing.

242-341 CLINICAL EXPERIENCES IN SCHOOLS 1 Cr. Supervised experience in classroom teaching for development of motor, perceptual, social and cognitive learning through Home Economics substantive areas. Prerequisite: Junior standing, 242-240 recommended.

242-350 LABORATORY TECHNIQUES FOR TEACHING AND LEARNING IN HOME ECONOMICS 1 Cr. Develop laboratory techniques for managing human and material resources to promote learning in a single purpose or diversified home economics laboratory. Prerequisite: Junior standing.

242-443 CLINICAL SEMINAR IN HOME ECONOMICS EDUCATION 2 Cr. Preparation for and evaluation of the student teaching experience. Emphasis on analysis of the classroom situation and evaluation of the teaching process. Prerequisite: 242-301 recommended; parallel enrollment 242-444 required.

242-444 PRACTICUM IN TEACHING HOME ECONOMICS 6 Cr. Practicum designed to provide experience in applying knowledge of theory of teaching and learning. Emphasis on self-evalua-

tion and analysis of the teaching learning situation under the guidance of a master teacher. Prerequisite: 242-301 recommended; parallel enrollment 242-443 required.

242-488 INTERNSHIP TEACHING 8 Cr. An alternate method of obtaining student teaching experience. Teacher interns receive a license to teach and salaried appointments in cooperating school systems for one full semester. Prerequisite: 242-301.

242-500 EXTERNSHIP: HOME ECONOMICS COMMUNITY EDUCATION 4-8 Cr. Practicum in one or more of the following: extension services in home economics; elementary education in home economics; post-secondary education in home economics; occupational teaching experience in home economics; and community educational services. Course cannot be taken for graduate credit without the approval of the graduate program director. Prerequisite: Consent of department.

242-503 PROGRAMS IN HOME ECONOMICS FOR THE MIDDLE SCHOOL 2 Cr. Development of techniques, materials, and curriculum concepts in Home Economics with the application of principles of human growth and development for teaching in the middle school.

242-620 VOCATIONAL PROGRAMS IN HOME ECONOMICS 2 Cr. Techniques, materials and curriculum for wage earning programs in Home Economics in the secondary and post secondary school. Preliminary procedures for program development included. Prerequisites: 242-301, 469-502.

242-623 EDUCATION FOR CONSUMER HOMEMAKING 2 Cr. Development of curriculum including evaluation of methods and materials for teaching Consumer Education at secondary level. Prerequisite: 242-301.

242-625 OCCUPATIONAL EDUCATION IN CLOTHING SERVICES 2 Cr. Development of the concept of occupational education in secondary, post secondary and adult programs in home economics; specifically related to a cluster of courses in clothing services. Prerequisite: Senior or graduate standing.

242-630 CONCEPTS OF EXTENSION EDUCATION 2 Cr. Study of the concepts and processes involved in conducting educational programs for adult and youth; includes philosophy, objectives and organization of Extension Education, leadership, development, program development, teaching methods and evaluation. Prerequisite: Senior or graduate standing.

242-640 HEALTH PROGRAMS IN HOME ECONOMICS 2 Cr. Curriculum and methodology for health programs in home economics including occupational programs. Prerequisite: Health course.

242-651 FAMILY LIFE EDUCATION PROGRAMS 2 Cr. Development of family life education programs including methods, materials and techniques for teaching family relationships and child development at the secondary level. Prerequisite: Senior standing, consent of instructor.

HABITATIONAL RESOURCES

245-105 MANAGEMENT FUNCTIONS FOR THE RESOURCES OF HABITAT 1 Cr. A survey course of the basic functions of management as they apply to the resources of habitat.

245-123 ESSENTIALS OF HOSPITALITY SERVICE 1 Cr. An orienta-

tion to acceptable hospitality standards which are essential in the proper planning and arranging of service for public and private functions.

245-140 INTRODUCTION TO HOSPITALITY AND FOOD SERVICE INDUSTRY MANAGEMENT 3 Cr. Development of historical background, the economics of tourism, vocational opportunities, basic system and organizational analysis, research, trends in industry and problems of current importance.

245-201 HOSPITALITY HOUSEKEEPING MANAGEMENT 2 Cr. Management principles applied to the duties and responsibilities of the housekeeper in hotels, motels, institutions and other hospitality enterprises.

245-202 FRONT OFFICE MANAGEMENT 2 Cr. The principles required to organize, operate and manage a front office in a hotel or motel. Guest needs, salesmanship, and procedures used in different types of front office operations.

245-211 QUANTITY FOOD PRODUCTION 3 Cr. Concepts for quantity food production: Menu planning, recipe development, work production schedules, production analysis, food and labor cost controls and introduction to productivity and work simplification concepts. Laboratory experience in food production and service. Prerequisite: 229-124.

245-222 INSTITUTIONAL FOOD PURCHASING 2 Cr. Methods of purchasing food in large quantities. Determination of standards, specific needs and industrial offerings; formulation of specifications, buying procedures, and controls. Prerequisite: 229-124.

245-240 INTRODUCTION TO TOURISM AND THE TRAVEL INDUSTRY

2 Cr. Principles and current knowledge of domestic and international tourism. The benefits of this industry to the community, area, state and nation, including its trends and potentials. Prerequisite: 320-210.

245-245 MARKETING FOR THE HOSPITALITY INDUSTRY 1 Cr. The principles of marketing as applied to the hospitality industry with emphasis on the conduct, interpretation and application of market research.

245-250 FAMILY HOUSING 3 Cr. The relationship of space, equipment, and aesthetic and cultural aspects to human habitat.

245-275 MANAGEMENT OF FAMILY RESOURCES 3 Cr. Application of the basic concepts of management to family and consumer economics. Prerequisite: 245-105.

245-284 HOUSEKEEPING SKILLS FOR THE EMR 3 Cr. The course provides the teacher trainee of the educable mentally retarded (EMR) with: (1) an understanding of basic family finances; (2) knowledge of resource utilization with respect to the house, home furnishings and equipment; (3) psycho-motor skills for related employment suitable to the EMR.

245-300 HOSPITALITY ORGANIZATION MANAGEMENT 3 Cr. Management principles pertinent to hotels and restaurants, supervisory development and training, labor relations, union contracts, ownership and financial structure, and managerial interpretation and evaluation of current systems and procedures. Prerequisite: 245-140.

245-301 BAR MANAGEMENT 2 Cr. The history, format and management of bar operations.

245-306 HOME MANAGEMENT THEORY 3 Cr. Study of principles relating to management within the home and the use of resources in achieving family goals. Emphasis on decision-making process.

245-312 RESTAURANT OPERATIONAL MANAGEMENT 3 Cr. Service of special functions, banquets, receptions, etc. Emphasis is placed on planning, preparation service, menu planning, cost controls, classical buffet set-ups and personnel organization. Prerequisites: 229-124, 245-123.

245-330 ECOLOGY OF THE HOME 3 Cr. A study of individual and family socio-economic behavior in rearranging the physical environment in the home to meet special desires and possible future relationships with the infinitely more complex ecological consequences. Prerequisite: 308-150.

245-340 DEVELOPMENT OF TOURISM ATTRACTIONS 3 Cr. The study of diversified natural and man-made background tourism elements (BTE), their preservation and incorporation in concepts for the development of tourism destinations. Prerequisite: 245-240, 320-210.

245-341 TOURISM GOODS AND SERVICES 3 Cr. Study of total and component parts of tourism goods and services including an examination of the present and future patterns of supply and demand. Prerequisites: 245-240, 320-201.

245-345 HOSPITALITY GROUP AND CONVENTION SALES 2 Cr. The development of the students' ability to identify the group and convention market; to construct or convert hospitality services to meet the needs of the market; and to apply proper sales management techniques in bringing the customer to the product.

245-346 **MARKETING FOR RESTAURANTS, CLUBS AND TAVERNS** 2 Cr. Preparation of effective management through the use of marketing techniques for food and beverage services.

245-355 **HOME EQUIPMENT OPERATIONAL PRINCIPLES** 3 Cr. A study of the physical principle and fuels involved in the operation of household appliances; and, selection, operation, use and care of small and portable appliances.

245-360 **CONSUMER ECONOMICS** 3 Cr. Motives in consumption; family income and expenditures, selection of commodities and services; buying and selling practices. Evaluation of consumer aids and investigation of local situations. Prerequisite: 320-201.

245-370 **HOTEL AND RESTAURANT ACCOUNTING** 3 Cr. A study in the design and interpretation of specialized accounting and financial control systems in management decision-making. Emphasis will include uniform system of accounts, departmentalized costing procedures, statement analysis and interpretation. Prerequisite: 160-206.

245-371 **FOOD, BEVERAGE AND LABOR COST CONTROLS** 2 Cr. The use of financial management techniques and systems to control food, beverage and labor costs in hospitality food service operations and clubs.

245-414 **HAUTE CUISINE** 3 Cr. The study and preparation of classical food items and service culminated with the serving of a formal banquet. Prerequisite: 245-312; seniors only accumulating GPA of 2.5 or better.

245-436 **LIGHTING FOR RESIDENTIAL INTERIORS** 2 Cr. Practical information on light for general residen-

tial living. Emphasis will be made on the sociological, psychological and physical aspects of the lighting environment.

245-455 **KITCHEN PLANNING** 2 Cr. Arrangement of work centers, equipment, storage and activities for maximum work efficiency in residential kitchen design. Prerequisite: 245-250 or permission of the instructor.

245-482 **SEMINAR IN HOTEL AND RESTAURANT MANAGEMENT** 3 Cr. An advanced course in management. The student will select and research a current topic of importance to the industry. Prerequisites: 245-140 and 245-300.

245-498 **AMERICAN STUDY TOUR IN BUSINESS AND INDUSTRY** 1 Cr. Five day visit in New York City or alternate city. Will involve study tours, discussions and lectures by leading people in industry, business and communications related to these fields.

245-501 **FOOD SERVICE ADMINISTRATION** 3 Cr. Organization and administration of institutional food service systems, personnel selection and training, cost control, and problems of supervision. Prerequisite: 229-318.

245-513 **QUANTITY FOOD PRODUCTION AND SERVICE** 3 Cr. Application of the principles of food preparation to large quantity production, menu and formula standardization, food production costs, and menu planning for institutions. Prerequisite: 245-501 or 245-312.

245-521 **FOOD SERVICE EQUIPMENT** 2 Cr. A comprehensive study of the factors affecting design, selection, layout, and uses of food service equipment and facilities. A quantitative approach in optimum utilization of physi-

cal and human resources. Students plan actual layouts of different types of food facilities. Prerequisite: 130-110.

245-531 ECOLOGY OF HABITAT 2 Cr. A broad philosophical as well as physical perspective of human housing and which includes international aspects. A deep insight into family housing needs and the achievement of learning regarding these needs through laboratory experience. Value is placed upon the role of the home economist in the solution of world housing problems. Prerequisite: Six credits of housing, equipment or equivalent.

245-565 CONSUMER ASPECTS OF LIFE INSURANCE 1 Cr. Comparative methods of determining life insurance needs; evaluation of the adequacy of policy and program features and its relevance to family financial planning. Prerequisite: 245-275 or consent of instructor.

245-566 CONSUMER ASPECTS OF HEALTH INSURANCE 1 CR. The types and sources of health insurance available to the American consumer. An analysis of the American health care crisis and proposed solutions. Prerequisite: 245-275 or the consent of instructor.

245-583 FOOD SERVICE SEMINAR 2 Cr. Discussion and interpretation of recent developments in institution management. Choice of problems based on needs and interests of students.

245-600 INTEGRATED MANAGEMENT SYSTEMS - HOSPITALITY 2 Cr. Exploration, comparison and synthesis of practices, concepts, and theories in hospitality management systems.

245-602 THE EXTENDED ROLE OF SCHOOL FOOD SERVICE 1 Cr. An

evaluation of the functions of school food service programs as an integral part of the school curriculum and community.

245-625 HOSPITALITY INDUSTRY LAW AND LIABILITY 3 Cr. The laws applicable to ownership and operation of inns, hotels, motels, restaurants, and other places of public hospitality.

245-626 EMPLOYEE AND LABOR RELATIONS IN THE HOSPITALITY INDUSTRY 2 Cr. An investigation of employee and labor relations in the hospitality industry-including the history, legality and techniques of dealing with unionization.

245-640 PSYCHO-SOCIAL DIMENSIONS OF TOURISM 3 Cr. The various psycho-social dimensions of tourism: motivation, development, community and conflict, as related to consumer-tourists, tourists, and residents.

245-650 HUMAN HABITAT 3 Cr. Appreciation and understanding of differences in socio-economic factors of the environment which influence effective utilization of family housing resources. Emphasis will be on adjustment and flexibility of safety, comfort, convenience, physical and financial maintenance based on the family cycle.

245-651 HOUSE EVALUATION SEMINAR 2 CR. Appreciation and understanding of the socio-economic factors and environmental conditions which influence effective utilization of family resources. Emphasis will be on costs, adaptability, safety, comfort, convenience, and maintenance based on family needs. Projects will be chosen and studied by the individual or group.

245-655 MAJOR KITCHEN APPLICATIONS 3 Cr. The detailed structure

and performance analysis of ranges, refrigerators, freezers, disposers, dishwashers, microwave ovens, and selected kitchen appliances. Prerequisite: 245-355.

245-656 MICROWAVE OVEN 2 Cr. Application of microwave heating principles to the preparation and service of foods.

245-658 EXPERIMENTAL LAUNDRY PROCEDURES 2 Cr. Application of current knowledge necessary for effective laundering of household fabrics. Special emphasis on use of equipment in the laundry process, laundry aids, and water composition. Experimental laboratory experiences.

245-660 CONSUMER CREDIT 1 Cr. An investigation of consumer credit — including types and sources of credit, determination of credit costs, considerations before using and regulatory laws. Prerequisite: 245-360 or consent of instructor.

245-662 CONSUMER PROTECTION 1 Cr. Consideration and evaluation of the major federal and state consumer protection agencies as well as major business, industry and private organizations set up to aid consumers. Discussion of avenues of individual and collective consumer redress. Prerequisite: 245-360 or consent of instructor.

245-663 CONSUMER LAW 1 Cr. An evaluation of the major federal and state consumer protection laws and consideration of the difficulties in obtaining passage and implementation. Discussion of pending federal and state consumer protection legislation. Prerequisite: 245-360 or consent of instructor.

245-670 HOSPITALITY INDUSTRY FINANCIAL ANALYSIS, BUDGET-

ING AND FORECASTING 3 Cr. The application of accounting and financial analysis techniques to managerial decision-making in the hospitality industry. Prerequisites: 160-206, 245-370, 245-371.

245-676 FAMILY FINANCE 2 Cr. A study of the financial decisions and judgments which the average individual and family must make during a lifetime. Emphasis is on income and occupation, family expenditures, credit, savings, taxes and estate plans. Prerequisite: 320-201.

245-681 SPECIAL PROBLEMS IN HABITATIONAL RESOURCES 2 Cr. Special seminars on current problems that exist in the area of Habitational Resources. Topics of the seminar can be chosen by the instructor, individual or the group.

245-685 DEMONSTRATION TECHNIQUES 2 Cr. Application of demonstration principles in planning and presenting all types of home economics demonstrations.

245-686 HOME MANAGEMENT SEMINAR 1 Cr. To prepare students for management in selected areas of consumer science, family economics, family finance, home management, household equipment, and housing. Opportunity to combine study of special topics and laboratory experiences in home management of family resources in seminars.

245-x98 FIELD EXPERIENCE AND HOTEL AND RESTAURANT 2 Cr. Off-campus work and study in an approved position to better understand the challenges and potentials of various careers in the hospitality area. Prerequisite: 245-140.

LIBERAL STUDIES

TWO YEAR PROGRAM

Students intending to graduate from another school may, with careful planning, complete one to two years of general education courses at University of Wisconsin-Stout. Students who have selected a college from which they expect to graduate should, if possible, obtain and study catalogs from the institution before registering in the Liberal Studies program at Stout. Correspondence with officials of the selected college will also help to determine the most relevant courses and assure acceptance of the credits.

Certain courses are basic to almost every college curriculum: Two semesters of English composition; mathematics; one year of a laboratory science (biology, chemistry, or physics); two semesters of history (either United States History or Western Civilization); speech; foreign language; and physical education.

Other subjects frequently required for college graduation or frequently recommended as electives include: literature, sociology, economics, American government, additional laboratory science, additional mathematics, psychology, philosophy, additional speech, theatre, art, and music.

Certain professional schools have specific requirements, but usually a year or more of pre-professional work can be transferred to other colleges or universities in the professions of:

Agriculture	Journalism	Physical
Architecture	Law	Therapy
Commerce	Medicine	Medical
Dentistry	Nursing	Technology
Education	Pharmacy	Social Work
Engineering		Veterinary
		Medicine

In addition to the Liberal Studies courses there are many technical and professional courses in the other schools of the University which would apply in specific professional curricula. Pre-professional courses should be carefully selected by studying the catalogs and corresponding with officials of the professional schools.

300-542 INDUSTRIAL HYGIENE 3 Cr. Principles and techniques to recognize, evaluate and control existing or potential occupational health hazards that affect employee safety and health.

ANTHROPOLOGY

303-220 INTRODUCTION TO CULTURAL ANTHROPOLOGY 3 Cr. Introduction to concepts and methods, variability of culture, outline of cultural elements, processes of cultural change.

303-250 MAN AND HIS PAST 3 Cr. An introduction to the study of biological anthropology. Included will be discussion of man as a primate, man's genetic makeup, stages of human evolution, the relation of biology to culture, concepts of race, and man and his present environment.

303-300 NATIVE AMERICANS 3 Cr. A focus on three major aspects of North American Indian Studies: 1) description of the varied Native American cultures prior to European contact; 2) Indian/European historical relationships; and 3) present day reservation/urban Indian life and issues.

ART

304-100 DRAWING 3 Cr. Concentration on the development of visual sensi-

tivity through drawing with various media.

304-101 FUNDAMENTALS OF DESIGN 3 Cr. Elementary design in two and three dimensions using various media with the intention of developing visual sensitivity.

304-202 INTRODUCTION TO ART 2 Cr. Principles of visual organization, the expressive possibilities offered by materials and the level of meaning and appreciation possible in the visual arts.

304-300 DESIGN THEORY AND METHODS 3 Cr. A study and application of various techniques and theories of design to fundamental design problems. Prerequisite: 304-101 or 170-205.

304-305 PRESENTATION TECHNIQUES 3 Cr. Experience in the various techniques of visually developing and presenting a design.

304-310 GRAPHIC DESIGN I 3 Cr. A systematic study of visual communication problems related to informing and/or persuading a specified audience. Prerequisite: 304-101.

304-315 ENVIRONMENTAL INTERIOR DESIGN I 3 Cr. Problems related to integrating systems analysis of architectural settings with use of interior design components; emphasis on private interior spaces: Home, office, classroom. Prerequisite: 304-504.

304-453 ADVANCED PRINTMAKING 1-3 Cr. Concepts and techniques for the experienced printmaking student who wishes to extend work in any of the four methods learned in 304-517 and 304-518. Prerequisite: 304-517, 304-518.

304-500 DRAWING 1-3 Cr. Continua-

tion of 304-100 with emphasis placed on the exploitation of media for creative and expressive ends. Prerequisite: 304-100.

304-501 LIFE DRAWING 3 Cr. The human figure in action and at rest. Problems in figure composition. Prerequisite: 304-100, 304-500.

304-502 LIFE DRAWING 1-3 Cr. Advanced problems in figure composition and in graphic interpretation of the figure. Prerequisite: 304-501.

304-503 DESIGN 3 Cr. Development of ideas presented in 304-101 in depth and complexity. Prerequisite: 304-101, 304-500.

304-504 INTERIOR DESIGN 3 Cr. Problems involving the design, selection, and arrangement of furnishings for living and working quarters. Prerequisite: 304-101.

304-505 PROBLEMS IN INTERIOR DESIGN 2 Cr. Advanced work in the design, selection and arrangement of furnishings for living and working quarters. Prerequisite: 304-504.

304-506 COSTUME DESIGN 2 Cr. Development of original designs for clothing. Prerequisite: 214-266, 304-101, 304-100, 304-500.

304-509 PAINTING 3 Cr. Introduction to the character and use of various painting media. Work from still life and life with reference to problems of two dimensional color composition. Prerequisite: 304-500.

304-510 PAINTING 1-3 Cr. Advanced work in oil painting, with reference to the exploitation on the medium for creative and expressive ends. Prerequisite: 304-509.

- 304-511 SCULPTURE 3 Cr. Introduction to sculptural concepts. Prerequisite: 304-500 or equivalent.
- 304-512 SCULPTURE 1-3 Cr. Advanced problems in sculpture with reference to the exploitation of media for creative and expressive ends. Prerequisite: 304-511.
- 304-513 CERAMICS 3 Cr. Basic design and techniques of ceramic production for the artist-potter; forming, firing, and decorating.
- 304-514 CERAMICS 1-3 Cr. Techniques in the use of clay, glazes, and kiln for the design and production of high fired ceramics. Prerequisite: 304-513.
- 304-515 ART METAL 3 Cr. The design and construction of objects in precious metals. Prerequisite: 304-101 or equivalent.
- 304-516 ART METAL 1-3 Cr. Advanced problems in the design and construction of objects in precious metals. Prerequisite: 304-515.
- 304-517 PRINTMAKING 3 Cr. The techniques of relief and lithographic printmaking. Prerequisites: 304-101, 304-100, 304-500.
- 304-518 PRINTMAKING 1-3 Cr. The techniques of intaglio and serigraphic printmaking. (May be taken for one-three credits when the first two three-credit courses in each area, which are required, have been completed.) Prerequisites: 304-101, 304-517, 304-500.
- 304-522 MODERN ART 3 Cr. The main currents and developments in art from Monet and Cezanne to 1950.
- 304-523 SURVEY OF ART: ANCIENT THROUGH MEDIEVAL 3 Cr. The painting, sculpture, architecture and minor arts in the ancient Western World.
- 304-524 SURVEY OF ART: THE RENAISSANCE THROUGH THE 20TH CENTURY 3 Cr. Sculpture, painting, architecture and minor arts of the Western World from 14th Century to present.
- 304-525 EGYPTIAN AND MESOPOTAMIAN ART 3 Cr. The evolution of the arts of ancient Egypt and the Near East.
- 304-526 GREEK AND ROMAN ART 3 Cr. The arts of ancient Greece and Rome.
- 304-527 MEDIEVAL ART 3 Cr. The arts of Europe and Byzantium from the later Roman Empire to the end of the Middle Ages.
- 304-528 ITALIAN RENAISSANCE ART 3 Cr. The problems and the evolution of Italian Renaissance sculpture and painting from the 14th to the 18th Century.
- 304-529 NORTHERN RENAISSANCE ART 3 Cr. The evolution of Renaissance art in northern Europe from the 15th to the 18th Century.
- 304-530 NORTHERN BAROQUE ART 3 Cr. Architecture, painting, sculpture and other art forms of 17th Century northern Europe.
- 304-531 SOUTHERN BAROQUE ART 3 Cr. The development of art in northern Europe from the Italian Renaissance to the 18th Century.

304-532 ECONOMICS OF HOUSE FURNISHING 3 Cr. Study of consumer home furnishing problems based on utilitarian, economic, aesthetic and social values of household commodities. Quantity and quality budgets at different price levels. Visits to home furnishing markets.

304-533 PERIOD FURNISHINGS 3 Cr. A survey of furniture and furnishings in the Western World.

304-534 FASHION ILLUSTRATION 2 Cr. Problems in graphic techniques, fashion illustration, contemporary fashion design and advertising presentation. Prerequisite: 304-101

304-535 THE ART OF THE BLACK 3 Cr. Examines the art of the Black proceeding from its genesis in Africa, its influences on 20th Century Europe and its development in the United States from the Colonial Period to the present.

304-600 EIGHTEENTH CENTURY EUROPEAN ART 3 Cr. The evolution of European art forms during the 18th Century.

304-601 PRE-COLUMBIAN ART 3 Cr. The arts of the Americas, including Incan, Mayan, and Aztec from 1200 B.C. to about 1550 A.D.

304-602 AMERICAN ART 3 Cr. The development of the visual arts in the United States from the Colonial Period to 1950.

304-603 NINETEENTH CENTURY ART IN EUROPE 3 Cr. History of European art from about 1800 to 1900.

304-604 ART SINCE 1950 3 Cr. Developments in painting and sculpture in Europe and America since 1950.

304-605 ORIENTAL ART 3 Cr. Art from prehistoric times to the 19th Century in India and the Asian sub-continent.

304-606 ORIENTAL ART 3 Cr. Art from prehistoric times to the 19th Century in China, Japan and their spheres of influence.

304-607 ESTHETICS 3 Cr. A seminar based on a study of statements by philosophers on art. Prerequisite: 304-522.

BIOLOGY

308-122 BIOLOGY: AN ENVIRONMENTAL APPROACH 3 Cr. Principles such as cellular metabolism, heredity, and relationships between living organisms and their environment are emphasized in this course.

308-132 PHYSIOLOGY AND ANATOMY 4 Cr. The basic concepts of physiological processes and anatomy of all organ systems of the human beings based on dissection of the cat; embryological development.

308-142 BOTANY 4 Cr. An introduction to the structure and function of plants; survey of the plant kingdom; structure and life history of representative forms of plant life.

308-150 MAN AND THE ENVIRONMENT 2 Cr. Man's relationship to the world environment. Contemporary problems such as air and water pollution; biocides; solid waste disposal; depletion of natural resources; the menace of overpopulation; and the impending food crisis.

308-152 ZOOLOGY 4 Cr. An introduc-

tion to the fundamental concepts of animal life; survey of the animal kingdom; structure and physiology of representative animals; evolutionary relationships.

308-220 PHYSIOLOGY OF DISABILITIES 3 Cr. The physiology of disabilities: etiology, pathology, clinical symptoms, prognosis, treatment, physical limitations resulting from specific diseases and disabilities. Prerequisite: 308-132.

308-250 ENTOMOLOGY 3 Cr. Identification, classification and control of insects found in the home, garden and nature. Prerequisite: 308-122 or 308-152.

308-306 GENERAL MICROBIOLOGY 4 Cr. Structure and physiology of yeasts, molds, and bacteria. Growth requirements; methods used in culture and identification; introductory studies in bacterial analysis of water and milk; other problems in sanitation and food bacteriology.

308-310 HUMAN SEXUAL BIOLOGY 3 Cr. Structure, function and coordination of the human reproductive organ system. Formation and function of sex cells. Problems of lactation, fertility, sterility, sexuality, birth control. Human population challenges. Prerequisite: 308-132 or 308-122.

308-332 GENETICS 2 Cr. Fundamental principles of genetics, their functions and applications to plants, animals and man.

308-333 GENETICS LABORATORY 1 Cr. Perform genetic crosses which reinforce an understanding of the principles of heredity. *Drosophila* (fruit fly) will be the primary experimental organism. Selected exercises are designed to give actual experience in test breeding, observing, tabulating and

interpreting results such as would be done in actual genetic research. Prerequisite: 308-332 or concurrent.

308-342 COMMUNITY HYGIENE 2 Cr. Disease prevention through education, sanitation, isolation, and immunization. Public health programs and operation of federal and state laws.

308-350 ECOLOGY 3 Cr. Interrelationships of organisms with their abiotic and biotic environments. Prerequisites: 308-142, 308-152 or parallel.

308-362 ADVANCED PHYSIOLOGY 3 Cr. Physiological processes: digestion, respiration, metabolism, excretion, circulation, and muscle. Histological studies of blood; experiments of frog and turtle hearts; nerve and muscle preparation. Respiratory, nerve, circulatory, and muscle experiments on the human body. Prerequisite: 308-132.

308-506 FOOD MICROBIOLOGY 3 Cr. Fundamental methods of food preservation, their effectiveness, and the related spoilage of food products by microorganisms. Quality control techniques employed in determining the presence of specific groups of economically important microorganisms. Prerequisite: 308-306.

308-520 COMPARATIVE ETHOLOGY I 2 Cr. A comparative study of the biological basis of human behavior. Primary emphasis will be given to the applicability of the development of animal behavior patterns to human beings. The phylogenetic adaptations of human behavior are to be examined to consider their theoretical importance for the study of the behavioral sciences.

308-521 COMPARATIVE ETHOLOGY II 2 Cr. A comparative study of biological basis of human behavior. Primary emphasis to be given to the

applicability of the development of animal behavior patterns to human beings. The phylogenetic adaptations of human behavior are to be examined to consider their theoretical importance for the study of the behavioral sciences. Prerequisite: 308-520.

308-550 SEMINAR IN ADVANCED COMPARATIVE ETHOLOGY I 2 Cr. An extension of Comparative Ethology (308-520, 308-521). An exploration of phylogenetic adaptations of human behavior, utilizing the comparative model developed in 308-520 and 308-521. Emphasis on the detailed study of sensory, central and motor behavior of animals as they relate to human behavior. Prerequisite: 308-520.

308-551 SEMINAR IN ADVANCED COMPARATIVE ETHOLOGY II 2 Cr. An extension of Comparative Ethology (308-520, 308-521). An exploration of phylogenetic adaptations of human behavior, utilizing the comparative model developed in 308-520 and 308-521. Emphasis on the detailed study of sensory, central and motor behavior of animals as they relate to human behavior. Prerequisite: 308-550.

CHEMISTRY

311-090 FUNDAMENTALS OF CHEMISTRY 3 Cr. For students having an inadequate background preparation in mathematics or basic chemistry. The fundamental principles of atomic and molecular structure, the behaviors of substances and the quantitative relationships arising from these principles and behaviors are stressed. Credit earned in this course cannot be counted toward fulfilling graduation requirements of any program.

311-111 PROJECT APPROACH TO CHEMISTRY 5 Cr. An experimental

course which can be used as meeting the requirements of 311-115 but which cannot be used for any prerequisite purposes. The course content and laboratory work is variable, depending upon the interests of particular students and consists of work on projects of interest to the student involving chemistry at the level of sophistication of first year college chemistry. After a short introduction to the use of the chemical literature, the student is expected, working alone or in a group of like-minded students, to read the literature which pertains to the chosen project and then to engage in the experimental and theoretical work of the project, using the instructor as a resource source. At culmination the results of this effort can be presented to the class in the form of a formal report.

311-115 INTRODUCTORY COLLEGE CHEMISTRY 5 Cr. The principles of Chemistry presented in a descriptive framework which does not emphasize mathematical analysis and emphasizes the application of basic concepts to contemporary problems including materials, their processing, uses and environmental effects.

311-135 COLLEGE CHEMISTRY I 5 Cr. Principles of inorganic chemistry and the properties of important elements and compounds. Approach is more rigorous and coverage more extensive than in 311-115.

311-136 COLLEGE CHEMISTRY II 4 Cr. Reactions and properties of common elements and inorganic compounds; oxidation-reduction and solution equilibria; electrochemistry. Laboratory procedures for qualitative analysis for common ions. Prerequisite: 311-115 or 311-135.

311-201 ORGANIC CHEMISTRY LECTURE 3 Cr. An introduction to the chemistry of carbon compounds with

emphasis on the characteristic reactions of the several functional groups. Aliphatic and aromatic compounds are studied concurrently. 311-203 normally taken concurrently with 311-201. Prerequisite: 311-115 or 311-135.

311-203 ORGANIC CHEMISTRY LABORATORY 1 Cr. Laboratory work normally taken concurrently with 311-201. Prerequisite: 311-201 (concurrent).

311-204 ORGANIC CHEMISTRY II LECTURE 3 Cr. Basic organic chemistry with emphasis on organic reaction mechanisms. 311-206 normally taken concurrently with 311-204. Prerequisites: 311-115 or 311-135, and 311-201.

311-206 ORGANIC CHEMISTRY II LABORATORY 1 Cr. Laboratory work normally taken concurrently with 311-204. Prerequisites: 311-201, 311-203 and concurrent with 311-204.

311-501 PHYSICAL CHEMISTRY LECTURE 3 Cr. Fundamental physical chemistry; the behavior of gases, the liquid state, the properties of solutions, the principles of thermodynamics, thermochemistry. 311-503 is normally taken concurrently. Prerequisites: 311-115 or 311-135, 355-156, (311-531 recommended).

311-503 PHYSICAL CHEMISTRY LABORATORY 1 Cr. Laboratory which may accompany physical chemistry, normally taken concurrently. Experimental techniques and apparatus. Treatment of experimental data. Prerequisites: 311-115 or 311-135, 355-156, (311-531 recommended).

311-511 BIOCHEMISTRY 3 Cr. Fundamental chemistry and metabolism of carbohydrates, lipids and proteins. Second and third order structure of proteins. Chemistry of nucleic acids.

Nature and dynamics of enzymes and enzyme action. Biological oxidations. Laboratory work involving polarimetry, colorimetry, chromatography and quantitative analytical procedures such as the Kjeldahl determination of protein nitrogen. Prerequisites: 311-201, 308-132.

311-515 FOOD CHEMISTRY 3 Cr. Organic biochemistry of foods with emphasis on the enzymatic and non-enzymatic changes associated with food preparation and storage, such as the Maillard-Browning reaction, denaturation of protein, changes in color, flavor, odor, texture and nutritive value. Techniques for the isolation and identification of the biochemical constituents of foods. Prerequisite: 311-115.

311-521 TEXTILE CHEMISTRY 3 Cr. Chemical and physical properties of monomers and high polymers of the following natural and synthetic fibers: cotton, cellulose derivatives, silk, wool, linen, nylon, polyesters, acrylics, olefins and polyurethanes. Laboratory analysis of textile fibers and textile fiber mixtures and dyestuffs; physical properties of textiles, synthesis of textile polymers, crease resistance. Textile finishing. Prerequisite: 311-115.

311-525 CHEMISTRY OF POLYMERS 3 Cr. An elementary study of the chemical and physical nature of polymers and of the methods of preparation and the uses of the principal types of polymeric substances. Prerequisite: 311-201.

311-531 QUANTITATIVE ANALYSIS 3 Cr. Introduction to the principles of quantitative chemical analysis and training in precision laboratory techniques. Prerequisite: 311-115 or 311-135.

311-535 INSTRUMENTAL METHODS OF ANALYSIS 3 Cr. Application

of instrumental methods to chemical analysis, including electrochemical methods; ultraviolet, visible, and infrared spectrophotometry, radiochemical methods, and applications of common instrumental methods. Techniques for obtaining reliable results by instrumental means. Prerequisite: 311-115 or 311-135, (311-531 recommended).

311-541 CHEMISTRY OF MATERIALS 3 Cr. The practical applications of the principles and facts of chemistry to technological problems. Topics include: the structure and properties of common materials; fuels—solid, liquid, gaseous, fossil, nuclear—and air pollution; water—domestic, industrial, sewage—and water pollution; electrical properties—cells, batteries, fuel cells, electrolysis—and corrosion of metals; protective coatings—paints, varnishes, enamels, lacquers, plating, anodizing, cladding, etc. Prerequisite: 311-115 or 311-135.

311-551 CHEMISTRY OF INDUSTRY I 4 Cr. A study of the chemistry of the materials used in industry and of industrial production processes. Prerequisite: 311-115 or 311-135 or equivalent.

311-552 CHEMISTRY OF INDUSTRY II 3 Cr. A study of the chemistry of the materials used in industry and of industrial production processes, including instrumentation and testing procedures, research techniques, scientific information and communication and industrial health and safety. Prerequisite: 311-551 or equivalent.

311-553 ENVIRONMENTAL CHEMISTRY 2 Cr. Environmental Chemistry is a course designed to present the principles and origins of those chemical reactions which lead to an ecological imbalance. Emphasis will be placed on systems which have contributed to large scale environmental pollution and/or which are of current importance and the study of chemical technology

needed to correct this imbalance. Prerequisite: 311-115 or high school chemistry or permission of instructor.

311-555 ENVIRONMENTAL CHEMISTRY LABORATORY 1 Cr. Environmental Chemistry Laboratory is designed to allow non-science students to perform qualitative and quantitative determinations for common environmental contaminants. The course should be taken subsequent to or along with Environment Chemistry lecture. Prerequisite: 311-553 or concurrently with 311-553.

311-561 INDUSTRIAL ORGANIC CHEMISTRY 3 Cr. An introduction to the common industrial organic chemical processes used for the preparation of raw materials and their processing into usable forms suitable for product manufacturing. Prerequisite: 311-201, 311-203, one semester or its equivalent.

ECONOMICS

320-201 GENERAL ECONOMICS 3 Cr. Introduction to the basic elements of economics. Analysis of economic institutions, issues, and policy; theories of price, national income, and employment. Not open to students taking 320-210 and 320-215

320-210 PRINCIPLES OF ECONOMICS I 3 Cr. Basic economic concepts and economic institutions, national income and employment analysis, business fluctuations, money and banking; monetary fiscal policies. Prerequisite: Sophomore standing.

320-215 PRINCIPLES OF ECONOMICS II 3 Cr. Price theory, income distribution, factor pricing, market mechanisms, functions of economic system, labor and collective bargaining and international economics. Prerequisite: 320-210.

320-325 ECONOMIC AND BUSINESS STATISTICS 3 Cr. Method of collection, analysis, and presentation of economics, social, and business data. Ratios, frequency distributions, averages, variability, linear regression, correlation, time series analysis, and principles of index numbers. Prerequisite: 355-118 or equivalent.

320-350 MONEY AND BANKING 3 Cr. Nature of money and bank credit; modern monetary theories, monetary policy. Emphasis on economics aspects rather than institutional description. Prerequisite: 320-201 or 320-210

320-370 COMPARATIVE ECONOMIC SYSTEMS 3 Cr. Functions of all economic systems. Theories of capitalist, communist, and socialist systems. Comparison of the systems of different countries. Prerequisite: 320-215.

320-410 MICROECONOMICS 3 Cr. Microeconomics: value and distribution theory; analysis of demand-firm, industry and utility; pricing of factors of production. Prerequisite: 320-215.

320-415 MACROECONOMICS 3 Cr. Macroeconomics: determination of income, employment, growth rates, and price levels. Monetary and fiscal policies necessary for full employment. Prerequisite: 320-215.

320-420 LABOR ECONOMICS 3 Cr. History of organized labor chiefly in Western industrial societies. Collective bargaining as viewed by labor, management, government, and the public. Basic labor economics; the institutions involved in modern labor relations. Prerequisite: 320-201 or 320-210.

320-425 ECONOMIC DEVELOPMENT 3 Cr. Social and economic factors underlying economic development. Capital formation, measurement

of growth, population problems. Considers both theory and practical problems. Prerequisite: 320-215.

320-430 HISTORY OF ECONOMIC THOUGHT 3 Cr. Principle economic writings of classical, neoclassical, and contemporary economists. Prerequisite: 320-215.

320-445 PUBLIC FINANCE 3 Cr. Survey of public finance at all governmental levels; taxation, expenditures, debt management, and fiscal policy. Prerequisite: 320-215.

320-470 ECONOMIC MODEL BUILDING AND FORECASTING 3 Cr. Basic course in the application of quantitative models and methods to forecasting. Prerequisites: 320-215 and 320-325, or equivalent.

320-480 PRINCIPLES OF INTERNATIONAL TRADE 3 Cr. Theory and practice. Capital movements; foreign exchange rates and controls; balance of payments; tariffs. Prerequisite: 320-215.

320-550 MANAGERIAL ECONOMICS 3 Cr. Decision-making in the firm; demand and cost analysis; competitive and non-competitive price systems, marketing problems, capital budgeting, and criteria for investment decisions. Prerequisite: 320-215.

320-610 CONTEMPORARY AMERICAN ECONOMIC PROBLEMS 3 Cr. Survey of domestic economic problems at advanced level with special emphasis on applications and effects on industry. Prerequisite: Graduate standing and three credits in Economics.

320-615 CONTEMPORARY INTERNATIONAL ECONOMIC PROBLEMS 3 Cr. Survey of international economic problems at advanced level

with special emphasis on application and effects on domestic industry. Prerequisite: Graduate standing and six credits in Economics.

ENGLISH AND JOURNALISM

326-090 WRITING WORKSHOP 3 Cr. Remedial writing course open to all students and taken on a pass/fail basis. The course is designed for those students who have particular writing problems and who need instruction and individual help. Credit earned for English 090 will not count toward graduation nor fulfill the English requirement.

326-101 FRESHMAN ENGLISH: COMPOSITION 3 Cr. The principles and practices of writing. Includes a documented paper. Prerequisite: Acceptable score on English Department Placement Examination or a passing grade in 326-090.

326-102 FRESHMAN ENGLISH: READING AND RELATED WRITING 3 Cr. Readings focused on a theme reflected in literature. Specific topics and approaches are developed by each instructor. Opportunity for the student to do responsible, independent study. Requires intensive practice in composition. Prerequisite: 326-101.

326-111 FRESHMAN ENGLISH: HONORS 3 Cr. Readings in world literature and related writing designed for training in techniques of composition. Includes a documented paper. Prerequisite: Departmental selection on basis of ability.

326-112 FRESHMAN ENGLISH: HONORS 3 Cr. Continuation of 326-111 (Honors). Prerequisite: Departmental selection on basis of ability, 326-101 or 326-111.

326-203 POETRY 3 Cr. Basic approach to narrative, dramatic, lyric poetry with emphasis on contemporary writers. Prerequisite: 326-102 or 326-112.

326-204 THE SHORT STORY 3 Cr. The style, structure, history and development of the short story as a literary form. Prerequisite: 326-102 or 326-112.

326-250 CLASSICAL AND BIBLICAL LITERATURE IN TRANSLATION 3 Cr. Selections from Greek, Hebrew, and Latin literature. Prerequisite 326-102 or 326-112.

326-300 CHILDREN'S LITERATURE 3 Cr. Critical and evaluative survey of literature for young children with practical application to children and writing for them. Prerequisite: 326-102 or 326-112.

326-306 REPORTING AND NEWS WRITING 2 Cr. Theory and practice of news gathering and reporting, journalistic style, copy and proofreading. Discriminative newspaper reading; the history of journalism, libel. Prerequisite: 326-102 or 326-112.

326-339 INTRODUCTION TO LINGUISTICS 3 Cr. An introduction to scholarly writing on the nature of language and the fundamental concepts and methodology of linguistic science, stressing those aspects which are accepted by most linguists. Prerequisite: 326-102 or 326-112.

326-340 THE STRUCTURE OF ENGLISH 3 Cr. New analytic and descriptive methods applied to modern English. Prerequisite: 326-102 or 326-112.

326-344 CONTEMPORARY RHETORIC 3 Cr. The theory and contemporary practice of the art of written persuasion. Includes a documented investigative paper. Prerequisite: 326-102 or 326-112.

- 326-345 CREATIVE WRITING 3 Cr. All aspects of imaginative writing. Prerequisite: 326-102 or 326-112 and permission of department.
- 326-346 EXPOSITORY WRITING 3 Cr. Factual writing including preparation of documented investigative paper. Prerequisite: 326-102 or 326-112.
- 326-347 CRITICAL WRITING 3 Cr. The art of evaluation and judgment. The writing of critical reviews and articles. Includes a documented critical paper. Prerequisite: 326-102 or 326-112.
- 326-348 AMERICAN LITERATURE 3 Cr. American prose and poetry from its beginnings to World War I. Prerequisite: 326-102 or 326-112.
- 326-350 MODERN BRITISH LITERATURE 3 Cr. Selected poetry, prose and fiction produced since World War I. Prerequisite: 326-102 or 326-112.
- 326-351 EUROPEAN LITERATURE IN TRANSLATION 3 Cr. Selected poetry, prose, and drama from Dante to present day. Prerequisite: 326-102 or 326-112.
- 326-355 RECENT WORLD LITERATURE 3 Cr. Selected readings in Contemporary Literature in Translation. Prerequisite: 326-102 or 326-112.
- 326-360 MODERN AMERICAN LITERATURE 3 Cr. Selected poetry, prose and drama produced since World War I. Prerequisite: 326-102 or 326-112.
- 326-364 THE COMIC SPIRIT 3 Cr. Studies in the comic impulse and the various forms it has taken at different times. Prerequisite: 326-102 or 326-112.
- 326-365 THE TRAGIC VISION 3 Cr. Studies in the tragic impulse and the various forms it has taken at different times. Prerequisite: 326-102 or 326-112.
- 326-370 REGIONALISM AND CULTURAL CONFLICT IN AMERICAN WRITERS 3 Cr. Two interlaced aspects of American Writing: the use of geographical region or cultural setting and the inevitable cultural conflicts resulting from economics and social change. Prerequisite: 326-102 or 326-112.
- 326-371 BLACK LITERATURE 3 Cr. A panorama of Black creative effort through the written work with a fuller study of selected Black writers. Prerequisite: 326-102 or 326-112.
- 326-372 WOMEN WRITERS 3 Cr. The course will analyze the writing of prominent American and British women novelists and poets of the 19th and 20th century and look at the criticism of women writers. Prerequisite: 326-102, 326-112.
- 326-374 REALISM IN LITERATURE 3 Cr. A study in the nature of literary realism. Prerequisite: 326-102 or 326-112.
- 326-381 RECENT AMERICAN LITERATURE 3 Cr. This course will provide a survey of American Poetry, fiction and drama since 1950.
- 326-400 ENGLISH LITERATURE 3 Cr. Selected English prose and poetry from Beowulf to 1798. Prerequisite: 326-102 or 326-112.
- 326-401 ENGLISH LITERATURE 3 Cr. Selected prose and poetry from 1798 to modern times. Prerequisite: 326-102 or 326-112.

326-402 CONCEPTS OF LITERARY CRITICISM 3 Cr. A systematic approach to literary theory, criticism, and history. The science and art of form and structure as presented by great critics with emphasis on new criticism. Prerequisite: 326-102, 326-112.

326-403 HISTORY OF THE ENGLISH NOVEL 3 Cr. Origin and development of the novel. Selected readings. Prerequisite: 326-102 or 326-112.

326-406 SHAKESPEARE 3 Cr. Representative plays of Shakespeare. Study of several plays and selected criticism. Prerequisite: 326-102 or 326-112.

326-410 WRITING AND SELLING FEATURE ARTICLES 2 Cr. Practice in techniques of writing and selling feature articles for appropriate markets. Students are required to submit articles for potential publication. Prerequisite: 326-102 or 326-112.

326-425 COPY EDITING AND PREPARATION 2 Cr. Development of skill in expanding and reducing written materials. Experience in copy reading, proofreading, headlines. Prerequisite: Consent of instructor.

326-450 STUDIES IN LITERATURE (THEME, AUTHOR, GENRE) 2-3 Cr. A study of a selected writer's work or of literature focusing on a significant theme of literature or of a genre not offered as a distinct course of similar duration within the departmental curriculum. May be taken twice. Prerequisite: 326-101, 326-102 or 326-111, 326-112, three credits of literature, or consent of instructor.

326-515 TECHNICAL WRITING FOR HOME ECONOMICS 3 Cr. An overview of specialized writing done by home economists in business. Experi-

ence in preparing reports, letters, and other appropriate materials. Prerequisite: 326-102 or 326-112, and junior standing.

326-516 TECHNICAL WRITING FOR INDUSTRY 3 Cr. A survey of the type of writing current in industry. Writing of business reports and other materials. Prerequisite: 326-102 or 326-112, and junior standing.

326-518 MASS COMMUNICATION IN AMERICAN SOCIETY 3 Cr. History, social implications, and future of the mass media of communications. Prerequisite: 326-102 or 326-112.

326-525 ADVANCED TECHNICAL WRITING 3 Cr. Designed to give students experience in writing technical articles, and to acquaint them with the requirements for publication in professional media. Students will be expected to research, write, and submit individual projects of suitable length and maturity. These projects must be connected with the student's area of specialization. Prerequisites: 326-515, 326-516 or consent of instructor

326-541 PSYCHOLINGUISTICS 3 Cr. A study of linguistics behavior and the psychological processes responsible for it. Prerequisite: 326-102, 326-112.

326-546 RESEARCH REPORTING 2 Cr. Effective organization and presentation of individual research. Prerequisite: 326-102, 326-112.

FRENCH

328-101 ELEMENTARY FRENCH I 4 Cr. Introduction to basic audio-lingual skills, to the essentials of grammar, and to reading for comprehension. Supplementary materials are drawn from the

cultural heritage of France. Minimum of one laboratory hour will be required.

328-102 ELEMENTARY FRENCH II
4 Cr. A minimum of one laboratory hour will be required. Continuation of 328-101. Prerequisite: 328-101.

328-201 INTERMEDIATE FRENCH I
4 Cr. A minimum of one laboratory hour will be required. Grammar review, vocabulary improvement, oral practice, original composition, and readings that stress French civilization and literature. Prerequisite: 328-102 or two years of high school French.

328-202 INTERMEDIATE FRENCH II
4 Cr. A minimum of one laboratory hour will be required. Continuation of 328-201. Prerequisite: 328-201.

328-301 ADVANCED FRENCH COMPOSITION AND CONVERSATION
2 Cr. A minimum of one laboratory hour will be required per week. The development of skills in writing and speaking correct, idiomatic French. Prerequisite: 328-202 or its equivalent.

328-302 STUDIES IN FRENCH LITERATURE
2 Cr. An introduction to French literature through the study of either a genre, a particular author, or a specific period. Prerequisite: 328-202 or its equivalent.

SPANISH

329-103 ELEMENTARY SPANISH
4 Cr. An introduction of conversational Spanish as it is spoken today in Mexico and South America.

329-104 ELEMENTARY SPANISH
4 Cr. An introduction to conversational

Spanish as it is spoken today in Mexico and South America. Prerequisite: 329-103.

HISTORY

338-120 UNITED STATES HISTORY
3 Cr. American history of 1865. Political, economic, and social forces which have shaped the nation to the close of the Civil War. Not available to students who have completed 338-220.

338-121 UNITED STATES HISTORY
3 Cr. Continuation of 338-120. Not available to students who have completed 338-220. Prerequisite: 338-120.

338-140 WESTERN CIVILIZATION
3 Cr. Survey of Western civilization along the Nile, the Fertile Crescent, through Greece, Rome, the Middle Ages, the Renaissance, and the Reformation.

338-141 WESTERN CIVILIZATION
3 Cr. A survey of Western civilization from the Reformation to the present.

338-210 MODERN WORLD
3 Cr. Modern trends in terms of historical backgrounds, providing a frame of reference for interpreting the contemporary world. United Nations.

338-220 HISTORY OF AMERICA
3 Cr. Survey of the United States. Not open to those taking the 22-credit minor, nor those who have completed 338-120 or 338-121.

338-322 AFRO-AMERICAN HISTORY
3 Cr. A social, cultural, and political history of the Afro-American in the New World, with the main emphasis upon the United States. Prerequisite: Any college history course.

338-340 ENGLISH HISTORY 3 Cr. The social, political, religious, military and economic history of Great Britain from the Restoration in 1660 to modern times.

338-360 ASIAN HISTORY 3 Cr. A historical survey—political, social, religious, economic. Emphasis on India, China, Japan, and the Philippines during the modern world.

338-380 LATIN AMERICAN HISTORY 3 Cr. A historical survey—political, social, economic—from Middle and South America, pre-Columbian to the present.

338-410 BIOGRAPHY OF WORLD LEADERS 2 Cr. Readings in the biographies and autobiographies of American, European, and modern world leaders.

338-420 RECENT HISTORY OF THE UNITED STATES 2 Cr. American history in the 20th Century. Study of recent world development in which the United States has played a part.

338-430 WESTERN UNITED STATES HISTORY: THE TRANS-MISSISSIPPI WEST 3 Cr. The development of the Trans-Mississippi West in the 19th Century, to include exploration, missionaries, settlement, fur trade, Indian problems, slavery, admission of new states, mining and cattle industries, agriculture, transportation, communication, culture, and land policies. Prerequisite: Junior standing or consent of instructor.

338-520 ECONOMIC HISTORY OF THE UNITED STATES 3 Cr. Economic evolution of the United States since colonial times. Development of economic problems and the foundations of modern industry. Prerequisite: 320-201 or 320-210.

338-540 HISTORY OF MODERN RUSSIA 3 Cr. Survey of significant developments in Russia since 1815.

APPLIED MATHEMATICS

354-111 CALCULATION: METHODS AND TOOLS 1 Cr. Scientific notation, percent, exponents, radicals, dimensional analysis, elementary algebraic equations and expressions, flowcharting. The slide rule, electronic calculators. Use of constant storage and programs. Applied problems from various fields.

354-130 COMPUTATIONAL STATISTICS 2 Cr. Organization and presentation of data, computation of descriptive statistics, regression and correlation theory and computation, elementary sampling theory; introduction to normal and binominal distributions, tests of hypothesis.

354-140 COMPUTER CONCEPTS 2 Cr. Introduction to computing. History of computers, hardware, software, and terminology. Components and functions of computers. Programming concepts and basic applications. How to run programs written by others. Includes the writing of programs in the basic timesharing language.

354-141 DIGITAL COMPUTER PROGRAMMING 2 Cr. Introduction to computer systems and their utilization. Emphasis on translating language, program writing, and debugging.

354-230 STATISTICAL METHODS 3 Cr. Histograms, mean and standard deviation, combinatorics, probability. Binomial, hypergeometric, normal, chi-square, T and F distributions and their uses. Statistical inferences. Contingency tables, linear models, analysis of variance. Applications to quality control

and management sciences. Prerequisite: Three years of high school mathematics, 355-120, or equivalent.

354-240 INTERMEDIATE COMPUTER PROGRAMMING 3 Cr. An extension of 354-141 to include subprograms, plotter output, disk I/O, and advanced FORTRAN techniques. Introduction to machine and assembly language programming. Prerequisite: 354-141.

354-241 ASSEMBLY LANGUAGE PROGRAMMING 2 Cr. Assembly language including interrupt concepts, interrupt service routines, and code conversion routines. Prerequisite: 354-141.

354-245 NUMERICAL METHODS 2 Cr. Computer programming and numerical methods for the solutions of equations, simultaneous equations, interpolation, numerical differentiation and integration, statistical analysis. Prerequisites: 354-141, 355-153 or 355-156.

354-246 COMPUTER PROGRAMMING - COBOL 3 Cr. Introduction to computer systems and their utilization. The development of programming practices and techniques, flowcharting, and application through a business oriented translating language. Prerequisite: 160-245 or 354-141.

354-331 PROBABILITY AND MATHEMATICAL STATISTICS I 3 Cr. Sets and combinatorial analysis, probability in discrete sample spaces, Bayes' rule, random variables and probability distributions, change of variable, marginal and conditional distributions, expectation, moments and moment generating functions, Chebyshev's theorem, central limit theorem. Prerequisite: 355-153 or 355-156.

354-332 PROBABILITY AND MATHEMATICAL STATISTICS II 3 Cr.

Sampling distributions, order statistics, introduction to decision theory, estimation, hypothesis testing, nonparametric methods, regression and correlation, analysis of variance. Prerequisite: 355-154 or 355-157, and 354-331.

354-341 DATA STRUCTURES 3 Cr. Review of set theory, functions, and relations. Basic concepts of data. Lists, strings, and arrays. Representation of graphs and trees. Storage systems and structures. Symbol tables and searching techniques. Sorting (ordering) techniques. Prerequisite: 354-240, 355-275 or 110-256.

354-430 INDUSTRIAL STATISTICS I 2 Cr. Review of statistical methods, hypothesis testing, estimation, goodness of fit, and sampling distributions. Emphasis on design of experiments: statistical problems from business and industry. Prerequisite: 354-130.

354-431 INDUSTRIAL STATISTICS II 2 Cr. Continuation of application of statistics to problems from industry and business. Directed independent work on selected problems. Introduction to sequential analysis. Prerequisite: 354-332.

354-445 NUMERICAL ANALYSIS 3 Cr. Mathematical theory supporting numerical methods of computer programming for solution of equations, simultaneous equations, numerical differentiation and integration, and approximation procedures. Prerequisites: 354-245, 355-255, 355-275.

354-490 MATHEMATICAL MODELS I 2 Cr. Supervised experiences in the construction of mathematical models for the solution of problems in the area of student needs and interests. Resource materials. Prerequisite: Senior standing in Applied Mathematics major.

354-491 MATHEMATICAL MODELS II 2 Cr. Continuation of Mathematical Models I. Prerequisite: 354-490.

354-640 COMPUTER USE IN EDUCATION 3 Cr. Use of the computer in administrative, research, and instructional aspects of education.

354-x98 COMPUTER SCIENCE FIELD EXPERIENCE 2 Cr. Off-campus work and study in an approved position to better understand the challenges and potentials of various careers related to the computer.

MATHEMATICS

355-010 FUNDAMENTALS OF ALGEBRA 2 Cr. A review of the fundamental principles of elementary algebra.

355-116 ELEMENTARY FUNCTIONS OF MATHEMATICS 4 Cr. Review of the basic concepts of algebra; the real number system, functions, exponents and radicals. Emphasis on trigonometric functions, identities, equations, reduction formulas; application problems. Not open to students who have completed 355-120 or 355-121. Prerequisite: Algebra transferred from a technical institute.

355-118 CONCEPTS OF MATHEMATICS 4 Cr. Elementary concepts in mathematical language and reasoning, sets, number systems and theory, algebraic equations, statistics and probability, geometry, computers. Includes historical survey. Prerequisite: One year high school algebra minimum.

355-120 INTRODUCTORY COLLEGE MATHEMATICS I 4 Cr. Set theory, logic and methods of proof, number systems and equations, use of time-shared

computer, vectors, matrices and inequalities. Prerequisite: Demonstrated proficiency.

355-121 INTRODUCTORY COLLEGE MATHEMATICS II 4 Cr. Open sentences, relations and functions, algebra of functions—trigonometric, exponential, and logarithmic. Prerequisite: 355-120.

355-123 FINITE MATHEMATICS WITH APPLICATIONS 4 Cr. Real number system, systems of linear equations and inequalities, sets, functions, vectors, matrices, probability, linear programming, theory of games, Markov chains. Prerequisite: 355-120 or consent of department.

355-153 CALCULUS I 4 Cr. Functions, limits, continuity, bounds, sets; the derivative of functions and applications; exponential, logarithmic, trigonometric and inverse functions. Not open to students who have completed 355-156, 355-157, or 355-158. Prerequisite: 355-121 or equivalent.

355-154 CALCULUS II 4 Cr. Continuation of Calculus I. Antiderivatives; integration theory, techniques, and applications; parametric equations; vectors. Prerequisite: 355-153.

355-156 CALCULUS AND ANALYTIC GEOMETRY I 5 Cr. Review of real numbers, inequalities, absolute values, intervals, and continuity. Analytic geometry of the plane. Limit concepts, derivatives of algebraic functions; definite integral. Not open to students who have completed 355-153 or 355-154. Prerequisite: Demonstrated proficiency.

355-157 CALCULUS AND ANALYTIC GEOMETRY II 5 Cr. Application of the derivative and definite integral. Conic sections, and other algebraic

curves. Calculus for rational, algebraic, circular, exponential and trigonometric functions; formal integration. Prerequisite: 355-156.

355-158 CALCULUS III 3 Cr. Continuation of formal integration. Parametric equations, polar representation, Cauchy's formula, Taylor's theorem, infinite series, vectors, partial differentiation multiple integration. Prerequisite: 355-154 or 355-157.

355-255 DIFFERENTIAL EQUATIONS 3 Cr. Common types of ordinary differential equations of the first and second order; linear equations with constant coefficients; series solutions, numerical approximations, systems of ordinary equations. Prerequisite: 355-154 or 355-157.

355-262 MODERN GEOMETRY 3 Cr. The development of a logical discourse. Betweenness properties and plane separation. Geometric models of axiomatic systems. Modern geometry of the triangle and circle. Transformations - linear, circular. Orthogonal systems of circles. Elliptic and hyperbolic geometry. Prerequisite: 355-153 or 355-156.

355-275 LINEAR ALGEBRA 3 Cr. Algebra of linear transformations and matrices. Determinants, equivalence relations, rank systems of equations, vector spaces, orthogonal transformations, characteristic equations and quadratic forms. Prerequisite: 355-153 or 355-156.

355-370 MODERN ALGEBRA I 3 Cr. Set theory, mappings, equivalence relations and classes, mathematical induction, Peano's postulates, isomorphisms; development of natural numbers, integers, rational, and real numbers; introduction to integral domains and rings. Prerequisite: Two years of college mathematics.

355-371 MODERN ALGEBRA II 3 Cr.

Continuation of Modern Algebra I. Rings, integral domains, fields, polynomials, groups, vector spaces. Introduction to the algebra of matrices. Prerequisite: 355-370.

355-450 REAL ANALYSIS I 3 Cr. Rigorous development of advanced topics in analysis. Functions, real numbers, sequences, Cartesian spaces, sequences of functions, limit superior and inferior, continuous functions. Prerequisite: 355-154 or 355-157.

355-451 REAL ANALYSIS II 3 Cr. Continuation of the topics of Real Analysis I. Differentiation, integration, infinite series. Prerequisite: 355-450.

355-460 COMPLEX VARIABLES WITH APPLICATIONS 3 Cr. Complex numbers, analytic functions, elementary functions of complex variables, mapping of elementary functions, integration techniques, power series and calculus of residues. Prerequisite: 355-255.

MUSIC

The objective of the Stout Music Department is to provide musical experience and opportunities for the development of understanding and appreciation of music. The study of this art not only enhances intellectual acumen but also provides aesthetic enjoyment and aids in the development of social coordination through group effort. The organization seeks to further the interest of musical culture and entertainment and to enhance the spirit and character of the university.

The musical organizations are open to any student in the university who can qualify and may be taken for credit as academic electives. All students are invited to attend concerts and may elect music courses and organizations for university credit.

360-090 STAGE BAND 1 Cr. Primarily organized to study and perform the music of the large dance band. Membership by audition only. Membership open to any qualified Stout student.

360-100 APPLIED MUSIC 1 Cr. Private one-half hour lessons on instrument of the student's choice. Some instruments are available from the Music Department.

360-101 CLASS PIANO 1 Cr. A study of the techniques of elementary piano performance.

360-134 RUDIMENTS OF MUSIC 1 Cr. A study of the fundamental elements of music; i.e. note reading, pitch, rhythm and vocabulary. Emphasis is placed on the use of flutophone, autoharp, rhythm instruments, and the voice in class. A survey of materials and methods suitable for pre-school music is made.

360-151 HARMONY 1 Cr. A detailed study of chord construction. All triads in major and minor modes, and dominant sevenths and their inversions. Dispersed harmony. Keyboard work and the playing of cadences.

360-153 MUSIC APPRECIATION 2 Cr. The materials of music as they pertain to perceptive listening. Study is related to a view of music and musicians from medieval times through the contemporary period and seeks to lead the student to a significant awareness of great music.

360-200 APPLIED MUSIC 1 Cr. Group lessons on selected instruments (ukelele and guitar) and voice.

360-234 ADVANCED TOPICS OF MUSIC 1 Cr. A continuation of 360-134

with considerable freedom of specialization according to individual needs, interest, and ability.

360-265 COLLEGE CHOIR 1 Cr. Advanced choral techniques, reading and analysis of choral music of all types and periods. Concert and radio appearances. Membership by audition only.

360-266 STOUT CONCERT BAND 1 Cr. Membership by audition only. Fundamentals of musical expression, tone production and quality, and special problems of technique. Formal concerts and radio broadcasting. Each spring instrumentalists are selected for the annual tour.

360-267 STOUT SYMPHONIC SINGERS 1 Cr. Membership by audition only. Advanced choral techniques, reading and analysis of choral music of all types and periods. Each spring vocalists are selected for the annual spring tour.

360-268 SOLO AND ENSEMBLE 1/2 Cr. Coaching of advanced performers, both vocal and instrumental, for public performance and radio work.

PHILOSOPHY

365-201 INTRODUCTION TO PHILOSOPHY 3 Cr. Introduction to various fields of philosophy, the history of philosophy, and the nature of philosophical investigation.

365-301 INTRODUCTION TO LOGICAL THINKING AND SCIENTIFIC METHODOLOGY 3 Cr. An examination of the forms of deductive reasoning and the fallacies together with a consideration of the inductive logic of evidence, confirmation, and probability.

365-500 PHILOSOPHY OF TECHNOLOGY 3 Cr. After a brief discussion of the scientific methods and of the interface between science and technology, the student will be introduced to the following problems: the nature and definition of technology; the philosophical implications of technology for man, for human values, for human knowledge and for human society. The course will culminate in the student's philosophical assessment of technology's possible and probable impacts on the future of man.

365-550 ETHICAL VALUING 3 Cr. Inquiry into valuing as a human activity including a study of ethical value bases, of value clarification and application processes and of student-designed valuation problems. Prerequisite: Sophomore standing.

PHYSICAL EDUCATION

366-101 HEALTH SURVEY 1 Cr. The relationship of personal health in the whole person. Of particular interest to the professional leader in education and community health practices.

366-102 PERSONAL HEALTH 2 Cr. This course emphasizes the prevention and care of the significant physiological and sociological effects of selected personal health problems in our society.

366-340 STANDARD FIRST AID AND PERSONAL SAFETY 2 Cr. American Red Cross certification for Standard First Aid and Personal Safety to help an individual increase their personal safety and accident prevention knowledge and to care for himself or others if emergency first aid care is needed.

366-350 ATHLETIC TRAINING AND CONDITIONING 2 Cr. To provide the student who is considering entering into

the field of Physical Education and/or coaching, a basic understanding of the prevention, treatment and care of athletic injuries.

366-355 KINESIOLOGY 3 Cr. A study of body movements and the principles affecting it.

The following 367-1xx courses are all 1/2 credits.

- 101 APPARATUS
- 103 ARCHERY-BEGINNING
- 104 ARCHERY-INTERMEDIATE
- 105 ARCHERY-ADVANCED
- 107 BADMINTON
- 109 BASKETBALL
- 111 BODY MECHANICS
- 113 BOWLING
- 115 CANOE TECHNIQUES
- 117 CIRCUIT TRAINING
- 119 CONDITIONING
- 121 EXERCISE AND FITNESS
- 123 FENCING
- 125 FLAG FOOTBALL
- 126 FOOTBALL
- 128 FOLK DANCE
- 130 GOLF-BEGINNING
- 131 GOLF-INTERMEDIATE
- 132 GOLF-ADVANCED
- 133 JUDO I
- 134 GYMNASTICS
- 135 JOGGING
- 136 KARATE
- 137 JUDO II
- 138 MODERN DANCE
- 140 ORIENTEERING
- 142 OUTDOOR SKILLS
- 144 PADDLEBALL
- 146 RACKET AND HANDBALL
- 148 RELAXATION
- 150 RIDING
- 151 PERSONAL DEFENSE
- 152 SKIING
- 154 SOCIAL DANCE
- 156 SOCCER
- 159 SOFTBALL
- 160 SPEEDBALL
- 163 SWIMMING-BEGINNING
- 164 SWIMMING-ADV. BEGINNING
- 165 SWIMMING-INTERMEDIATE
- 166 SWIMMING-SWIMMERS
- 167 SWIMMING-ADVANCED
- 168 SWIMMING

171 SYNCHRONIZED SWIMMING
172 WATER GAMES
173 SKIN AND SCUBA DIVING
176 TENNIS-BEGINNING
177 TENNIS-INTERMEDIATE
180 TRACK AND FIELD
182 TUMBLING
185 VOLLEYBALL
187 WEIGHT TRAINING
189 WRESTLING

367-201 GYMNASTICS—MEN 2 Cr.
Elements of gymnastic tumbling and the use of gymnastic apparatus as a part of a modern program of physical education.

367-202 INDIVIDUAL AND DUAL SPORTS—MEN 2 Cr. History and theories of play. Rules and regulations of individual and dual sports. Badminton, tennis, table tennis, bowling, golf, archery, horseshoes, and practice of the various skills.

367-212 FOUNDATIONS OF PHYSICAL EDUCATION 1 Cr. An interpretation of psychological, physiological and sociological basis of physical education; an image of physical education as a discipline for all students.

367-215 GYMNASTICS—WOMEN 2 Cr. Skills and methods in stunts, tumbling, apparatus and conditioning.

367-225 INDIVIDUAL SPORTS 2 Cr. Skills, rules and teaching methods in archery, bowling and golf and recreational games.

367-226 RACKET SPORTS 2 Cr. Skills, rules, and teaching methods in badminton, racketball/handball and tennis.

367-235 RHYTHMIC ACTIVITIES 2 Cr. A teaching methods course in the fields of rhythms-modern, folk, square and social dance.

367-241 SENIOR LIFE SAVING 1 Cr. A Red Cross training program which provides the student with knowledge and skills designed to save his own life or the life of another in the event of an emergency. Prerequisite: ARC Swimmers Level Ability.

367-245 TEAM SPORTS—WOMEN 2 Cr. Skills, rules, and teaching methods in field sports, basketball, volleyball and softball.

367-255 TEAM SPORTS—MEN 2 Cr. Fundamentals and teaching knowledge of the following sports: touch football, soccer, softball, speedball, volleyball, basketball, hockey, and games leading up to team sports.

367-260 RECREATIONAL GOLF 1 Cr. Fundamental principles of golf including skills, history, etiquette and practical application of techniques. The student is required to play 27 holes of golf, pay green fees, and furnish three golf balls for class use.

367-265 PHYSICAL ACTIVITIES FOR PRESCHOOL CHILDREN 2 Cr. A study of the sequential development of physical perceptual skills for children from birth to age five, and perceptual motor activities which can be used to foster this development.

367-306 PHYSICAL EDUCATION FOR HANDICAPPED STUDENT AT SECONDARY LEVEL 2 Cr. Study of diversified program of developmental activities, games, sports, and rhythms suited to the interests, capacities and limitations of students with disabilities who may or may not safely or successfully engage in unrestricted activities of the general physical education program.

367-315 ADAPTED PHYSICAL EDUCATION 3 Cr. A study of diversified developmental activities suited to the

interests, capacities and limitations of students with disabilities who may or may not safely or successfully engage in unrestricted activities of a general physical education program.

367-325 RECREATIONAL LEADERSHIP 2 Cr. Objectives, principles, methods, and content of a recreational program. Problems of facilities, equipment, and leadership. Organization and administration of a recreational program for various age levels.

367-340 CAMP LEADERSHIP 2 Cr. Role of camp counselors in relationship to objectives, organization, guidance, leadership skills, and program resources in organized camps; actual practice in camp-craft skills.

367-342 WATER SAFETY INSTRUCTOR 2 Cr. The American Red Cross training course for water safety instructors consists of Part I — teaching and testing of swimming, life saving skills, and general knowledge of water safety; and Part 2 — theoretical and practical knowledge and assistance in teaching of Red Cross life saving and water safety courses. Prerequisite: Senior Life Saving.

367-345 BASKETBALL OFFICIATING 1 Cr. The course will include rules, and officiating techniques for both men's and women's basketball and will prepare students for acquiring DGWS and/or WIAA officiating certifications. Prerequisite: Team Sports or consent of instructor.

367-350 PRINCIPLES OF PHYSICAL EDUCATION 2 Cr. The principles of physical education based on scientific facts and expression of educational ideals. Aims and objectives of physical education as applied to various school levels.

367-370 ELEMENTARY SCHOOL PHYSICAL EDUCATION 2 Cr. Methods and materials for teaching physical education in the elementary school.

367-375 HISTORY AND PHILOSOPHY OF PHYSICAL EDUCATION 3 Cr. Physical Education from ancient to modern times stressing relationship to the social situation and to the major philosophies. Prerequisite: Junior standing or consent of instructor.

367-380 ADMINISTRATION OF INTRAMURAL SPORTS 2 Cr. An overview of the problems, procedure, philosophy and trends currently existing within intramural programs in high schools and universities in the United States.

367-408 METHODS OF TEACHING PHYSICAL EDUCATION 2 Cr. Class organization and methods of teaching physical education. Participation with actual classes through the required freshman program.

367-450 ORGANIZATION AND ADMINISTRATION OF PHYSICAL EDUCATION 2 Cr. The problems that arise in everyday experience of the instructor in physical education. The relationship of physical education to general education; utilization, planning and care of facilities and equipment; time allotment, classification of activities and children, leadership, organization, supervision, routine procedures.

367-460 COACHING BASKETBALL 2 Cr. Fundamentals and methods of teaching and coaching of basketball. Specified techniques analyzed. Definite plan of offense and defense presented. Rules, practice schedules, fundamentals, theories, and their application.

367-461 COACHING FOOTBALL 2 Cr. Fundamentals and methods of teaching

and coaching football. Specified techniques analyzed. Definite plan of offense and defense presented. Rules, practice schedules, fundamentals, theories, and their application.

367-465 COACHING COMPETITIVE SWIMMING 2 Cr. Principles and techniques of coaching competitive swimming. Prerequisite: WSI or one year of competitive swimming.

367-470 COACHING BASEBALL 2 Cr. Fundamentals and methods of teaching and coaching baseball. Specific techniques analyzed. Definite plan of offense and defense presented. Rules, practice schedules, fundamentals, theories, and their application.

367-471 COACHING TRACK AND FIELD 2 Cr. Fundamentals and methods of teaching track and field. Specific techniques analyzed. Definite plan of offense and defense presented. Rules, practice schedules, fundamentals, theories, and their application.

367-478 COACHING AND OFFICIATING VOLLEYBALL 2 Cr. Skills and techniques of coaching and officiating competitive volleyball. Prerequisite: One year competitive volleyball or 367-185.

PHYSICS

372-221 MECHANICS AND ELECTRICITY 5 Cr. A study of the basic concepts in mechanics and electricity. Prerequisite: 355-121 or equivalent.

372-222 HEAT AND THERMODYNAMICS 2 Cr. Concepts of temperature and heat, temperature dependent properties and processes; heat transfer; laws relating heat and other forms of power. Prerequisite: 372-221.

372-223 LIGHT AND SOUND 3 Cr. General laws of physics in the fields of sound and light. Acoustics, vision, lighting standards, lenses, optical instruments, polarization, and fluorescence. Prerequisite: 372-221.

372-251 TOPICS IN ASTRONOMY 1 Cr. Selected topics in the field of astronomy are described qualitatively, emphasizing the physical principles involved in understanding this system. The significance of space exploration, radio telescopes, and other modern methods of obtaining astronomical information is brought out.

372-252 LASER LIGHT AND WAVES 1 Cr. The wave properties of laser light are described. Interference and diffraction are introduced as general properties of waves; then it is shown that the properties of laser light imply that interference and diffraction effects are very important in laser light. Applications of laser light, including holography, will be stressed.

372-253 ATOMS AND NUCLEAR ENERGY 1 Cr. The properties of atoms are described, emphasizing how these properties are studied. The properties of the atomic nucleus that lead to nuclear energy are brought out. The utilization of nuclear energy in power systems is discussed, along with some of the problems, both technical and social, encountered in this application.

372-325 STRENGTH OF MATERIALS 3 Cr. Fundamental theory of strength of materials. Analysis of tension, compression, shear, biaxial tension and compression, torsion, stresses and deflection of beams. Prerequisite: 372-221.

372-527 PHYSICAL ELECTRONICS 3 Cr. Theory and application of semi-conductors, vacuum and gas tubes. Basic principles of electronic circuits. Prerequisite:

quisites: 355-153, 372-221; 110-240 or 110-244.

372-529 **ATOMIC AND NUCLEAR PHYSICS** 3 Cr. Elements of atomic and nuclear physics and the industrial application of atomic energy. Prerequisites: 372-223, 355-153.

372-531 **STATICS** 3 Cr. Essential elements of statics including simple force system, theory and application of non-concurrent forces, couples, friction, non-coplanar forces, trusses, and other structures. Prerequisites: 372-221, 355-153, 354-141.

372-533 **DYNAMICS** 3 Cr. Essential elements of dynamics including rectilinear, angular, and harmonic motions; forces producing motion, work, energy, acceleration, impulse and momentum. Prerequisite: 372-531.

372-535 **ELECTROMAGNETIC RADIATION AND OPTICS** 3 Cr. The properties of electromagnetic radiation are introduced, both from the standpoint of physical optics and also from the viewpoint of radiation from an antenna system. The close relationship between these two approaches is stressed.

372-537 **ELECTRICITY AND MAGNETISM** 3 Cr. The properties of electric and magnetic fields in free space and in material media. Prerequisites: 372-221 or 355-154 Co-requisite.

372-641 **FLUID MECHANICS** 3 Cr. The basic properties of fluids in motion are developed for both compressible and incompressible fluids. The equations of fluid flow are developed and solved for both rotational and irrotational flows. Prerequisites: 372-533 and 355-154.

POLITICAL SCIENCE

375-210 **GOVERNMENT** 3 Cr. Functioning of governmental units in the U.S.A. Political principles, processes, problems; constitutional principles. Comparison of selected foreign governments.

375-220 **STATE AND LOCAL GOVERNMENT** 3 Cr. State and local governments within the U.S. federal system. Prerequisite. 375-210 recommended.

375-310 **POLITICAL PARTIES AND PRESSURE GROUPS** 3 Cr. Analysis of modern political parties. Nominating methods, campaigns, elections. Practical politics in legislative bodies; machines and bosses. Prerequisite: 375-210.

375-320 **CIVIL LIBERTIES IN THE UNITED STATES** 3 Cr. The constitutional basis of the rights of minority groups; emergent trends in voting rights; free speech, freedom of religion, censorship, rights of defendants, and limitations of dissent. Prerequisite: 375-210 or junior standing and by consent of instructor.

375-340 **INTERNATIONAL RELATIONS** 3 Cr. World survey of conditions determining power relationships, i.e., balance of power, collective security, and deterrence; analysis of the role of international organizations in world politics.

375-345 **PROBLEMS OF AMERICAN FOREIGN POLICY** 3 Cr. Descriptive analysis of the way American foreign policy is formulated by federal agencies; persistent problems in national security and international stability. Prerequisite: 375-210 or by consent of instructor.

375-350 INTRODUCTION TO COMPARATIVE GOVERNMENT 3 Cr. Political institutions of major foreign nations, stressing comparison of basic principles and techniques with those of the United States; survey of political institutions of underdeveloped areas. Prerequisite: 375-210 or by consent of instructor.

375-550 POLITICS AND TECHNOLOGY 3 Cr. A contemporary and future look at technological innovations will show an increased relationship between the political institutions of a country and the promotion, regulation, and impact of industry and technology. This relationship will be explored in the United States as well as other selected countries. Prerequisite: Junior or senior standing.

SOCIOLOGY AND SOCIAL WORK

387-110 INTRODUCTORY SOCIOLOGY 3 Cr. Social interaction in human groups. Relationships between the individual and the group; basic institutions; social change and current trends.

387-205 INTRODUCTION TO SOCIAL WORK 3 Cr. The field of social work as a profession; history and philosophy of social services; basic information for teachers, counselors, and those interested in the profession. Prerequisite: 387-110.

387-215 SOCIOLOGY OF THE FAMILY 3 Cr. The family as an institution. History; variations in other cultures; relationships to other institutions. Interactions of members in various stages of the life cycle. Prerequisite: 387-110.

387-250 SOCIAL PSYCHOLOGY 3 Cr. The theory of social interaction and its

applications with special emphasis on communication. Prerequisite: 387-110.

387-310 SOCIOLOGY OF EDUCATIONAL INSTITUTIONS 3 Cr. A study of the social aspects of education including the school as an agent of socialization, role of the school in social change and in maintaining the status quo, the social of education, the control of educational institutions, and the relationship of educational institutions to other social institutions. Prerequisite: 387-110.

387-420 CHILD AND FAMILY AGENCIES 2 Cr. This course seeks to study the social and legal status of children in American society, and the various social services which are designed to facilitate the child's optimum growth and development. The nature and needs of families will be considered and several family service agencies studied.

387-515 PROBLEMS OF AMERICAN SOCIETY 3 Cr. Sociological perspective on selected social problems. Prerequisite: 387-110.

387-525 SOCIOLOGY OF LEISURE 3 Cr. An institutional approach to the effects of leisure on social structure; the values reflected in leisure; problems attending the increase in leisure resources. Prerequisite: 387-110.

387-530 SOCIOLOGY OF THE COMMUNITY 3 Cr. Structure of the community, chiefly in the U.S. Variability and current trends; research techniques; community development. Prerequisite: 387-110.

387-540 SOCIOLOGY OF WORK 3 Cr. Human behavior in various types of employment and occupations; trends in the occupational structure of the U.S. Prerequisite: 387-110.

387-560 SOCIOLOGY OF JUVENILE DELINQUENCY 3 Cr. Definitions and trends of deviant behavior among youth; research findings; efforts toward prevention, control, and treatment. Prerequisite: 387-110.

387-575 SOCIOLOGY OF MINORITY GROUPS 3 Cr. Social-psychological aspects of the interaction between majority and minority groups; trends of minorities in the United States. Prerequisite: 387-110.

SPEECH

391-100 FUNDAMENTALS OF SPEECH 2 Cr. Techniques of effective speech based upon diagnosis of individual needs and training for the improvement of the necessary skills. Emphasis on speaker-listener relations, speech organization, voice, bodily action, language, and the development of confidence and poise.

391-101 FORENSICS 1-2 Cr. a semester and a maximum of 6 Cr. Training in speech through participation in intercollegiate forensics, including oral interpretation, oratory, extempore speaking, after-dinner speaking, debate, discussion, and preparation of speech programs.

391-102 FORENSICS 1-2 Cr. a semester and a maximum of 6 Cr. Training in speech through participation in intercollegiate forensics, including oral interpretation, oratory, extempore speaking, after-dinner speaking, debate, discussion, and preparation of speech programs.

391-103 FORENSICS 2 Cr. a semester and a maximum of 6 Cr. Training in speech through participation in intercollegiate forensics, including oral in-

terpretation, oratory, extempore speaking, after-dinner speaking, debate, discussion and preparation of speech programs.

391-104 FORENSICS 1-2 Cr. a semester and a maximum of 6 Cr. Training in speech through participation in intercollegiate forensics, including oral interpretation, oratory, extempore speaking, after-dinner speaking, debate, discussion, and preparation of speech programs.

391-110 SPEECH FOR INTERNATIONAL STUDENTS 1 Cr. Practical experience in communications in various situations. Individual and group attention to speaking and listening through the use of phonetics and tape recordings. Length of course varies with individual progress.

391-130 THEATRE WORKSHOP 1 Cr. Practical experience in directing, acting, and/or stagecraft through participation in University Theatre productions. Prerequisite: 391-100.

391-131 THEATRE WORKSHOP 1 Cr. Continuation of Speech 130. Further experience in some phase of play production in University plays. Prerequisite: 391-130.

391-200 PERSUASIVE SPEAKING 2 Cr. Advanced techniques of speaking. Development of proficiency in audience analysis, speech composition and delivery of various types of speeches. Prerequisite: 391-100.

391-202 ORAL INTERPRETATION 2 Cr. Individual and group activities for developing skill in a variety of speech situations. Projects in analysis and delivery of literature. Special consideration of individual problems. Prerequisite: 391-100.

391-204 **TECHNIQUES OF GROUP LEADERSHIP** 2 Cr. Techniques for presiding at various meetings through use of parliamentary law. Training in the art of persuasion as a means of motivating and guiding the behavior of others. Prerequisite: 391-100.

391-206 **DISCUSSION** 2 Cr. Principles and techniques of discussion and debate: Leading and participating in the symposium, panel roundtable, and other discussion forms; preparing and presenting debates on current problems. Prerequisite: 391-100.

391-208 **THEORY OF COMMUNICATION** 3 Cr. A study of the way people communicate with each other, stressing individual, interpersonal, and public communication. Prerequisite: 391-100.

391-232 **INTRODUCTION TO THEATRE** 3 Cr. Development of the theatre from ancient times to the present. Emphasis on play styles, production methods, and audience appreciation; including reading of representative plays.

391-244 **RADIO PROGRAMMING AND PRODUCTION** 3 Cr. Planning, writing, and producing various types of radio programs. Programs may be broadcast from University radio station. Prerequisite: 391-100.

391-310 **INTRODUCTION TO SPEECH CORRECTION** 2 Cr. The nature, causes, and methods of correcting voice and articulation defects. Prerequisite: 391-100.

391-334 **CONTEMPORARY THEATRE** 2 Cr. Analysis of selected plays including structure, dramatic content, and production methods. Field trips to current plays. Prerequisite: 391-100.

391-336 **STAGECRAFT AND SCENE**

DESIGN 2 Cr. Technical problems in producing plays; designing the set; construction, painting, and handling scenery; stage lighting; make-up; costuming; sound and visual effects; and organization of the production staff. Prerequisite: 391-100.

391-338 **PLAY PRODUCTION** 2 Cr. Directing and staging of plays: selecting, rehearsing, and acting techniques. Prerequisite: 391-100.

391-475 **DIRECTION OF SPEECH ACTIVITIES** 2 Cr. Organization, administration, procedures, and judging of speech activities such as plays, oratory, interpretation, public speaking, discussion and debate. Prerequisite: 391-100.

391-508 **SPEECH SKILLS FOR BUSINESS AND INDUSTRY** 2 Cr. Training in technical speaking; projects emphasizing the application of speech skills and activities in business and industry. Prerequisite: 391-100 and junior standing.

391-512 **SPEECH SKILLS FOR EDUCATORS** 2 Cr. Application of leadership techniques and speech skills in classroom and educational activities. Prerequisite: 391-100 and junior standing.

391-514 **INTERVIEWING** 1 Cr. Principles and techniques of interviewing for the interviewer and interviewee in both the information and the employment interview. Prerequisite: 391-100

391-554 **TELEVISION PROGRAMMING AND PERFORMANCE** 3 Cr. Planning, writing, and performing in instructional, public service, special feature, or dramatic television programs. Programs will be produced in cooperation with students in 600-593. Prerequisite: 391-100.

EDUCATION

PROFESSIONAL TEACHER EDUCATION

To qualify for teacher education, students must meet a number of pre-admission requirements. Official entry to teacher education generally occurs the first or second semester of the junior year even though students may have enrolled in education courses as freshmen or sophomores in some programs.

Pre-admission requirements are: A grade point average of 2.25, which must be maintained through the senior year.

Students must have approval from the Health Department. If a physical examination blank signed by a physician is properly filled out and on record in the office of the Health Department, and no known health problems exist, this approval is automatically provided by the school nurse who sends a signed form to the Dean of Student Affairs. Individuals facing special and temporary problems in health may apply for admission to the Student Personnel Committee for Teacher Education.

Students wishing to qualify for teacher education must show proficiency in English by earning a "C" in the last course in English Composition or having a transfer record of "C" in such a course from another accredited college or university. If a deficiency exists, a student may elect to do remedial work in English to earn a "C" in the final examination of 102, or earn a qualifying score on the Cooperative English Test Administered by the University Counseling Center.

Students entering teacher education must also present evidence of speech proficiency. All students are rated in the first required speech course as to their proficiency. Those rated as unsatisfactory may enroll in the non-credit evaluation program or take a second speech course (391-223, 391-320,

391-325, or 391-406) to attempt to achieve proficiency.

Complete curricula in teacher education are found under American Industry, Art Education, Distributive Education, Home Economics Education, Industrial Education, Early Childhood Education, Vocational Education, and Technical Education. (Department numbers in this section reflect the subject matter area.)

ART EDUCATION

405-408 PRACTICE TEACHING IN THE ELEMENTARY SCHOOL —

ART 4 Cr. Directed teaching and community experience in selected off-campus elementary schools. Prerequisites: 405-608 and 405-609.

405-409 PRACTICE TEACHING IN THE SECONDARY SCHOOL—ART 4 Cr. Directed teaching and community experience in selected off-campus secondary schools. Prerequisites: 405-608 and 405-609.

405-608 INTRODUCTION TO TEACHING ART IN THE ELEMENTARY SCHOOLS 3 Cr. Development of basic knowledge and skills needed to foster and extend creative growth in children.

405-609 INTRODUCTION TO TEACHING ART IN THE SECONDARY SCHOOLS 3 Cr. Development of art principles and practices that expand creative growth and development in secondary school students.

405-611 CURRICULUM DEVELOPMENT FOR ART 2 Cr. A study of the needs and methods used in developing a sequential K-12 art curriculum.

COUNSELING AND PERSONNEL SERVICES

413-501 INTRODUCTION TO GUIDANCE 2 Cr. An overview of policies and practices of organized guidance programs in educational settings. Emphasis is given to historical, philosophical, and cultural bases for guidance services; guidance techniques for teachers; and cooperative efforts of teachers, parents and counselors.

413-629 GUIDANCE IN THE ELEMENTARY SCHOOL 2 Cr. The nature and conditions of guidance in the elementary school. Curricular and non-curricular guidance techniques, referrals, and parent counseling. Recommended principles and practices in guidance applied to the elementary school child.

413-647 BEHAVIOR PROBLEMS OF CHILDREN 2 Cr. Understanding the psychological, social and environmental factors which contribute to the developing child's behavior. Primary emphasis is on the cause and treatment of behavioral disorders in children three through twelve. Included: methods of observing, diagnosing, documenting and interpreting and underlying behavioral dynamics of problem children.

413-648 LEARNING DISABILITIES IN YOUNG CHILDREN 2 Cr. Stresses early recognition, through observation and use of screening instruments, of general and specific developmental delays in the young child, and programming to maximize readiness for academic learning.

413-655 HUMAN RELATIONS IN THE COMMUNITY 2 Cr. Consideration of the social, psychological, medical, physical, spiritual and interpersonal aspects of growing into responsible adulthood.

413-675 COUNSELING THEORY 2 Cr. The examination of theoretical approaches to counseling, including psychoanalytic adaptations, behaviorism, traitfactor, client-centered and other approaches. Each approach is examined concerning the nature of man, the underlying personality theory, goals of counseling, the role of counselor, and illustrative practical applications. The major objective of the course to develop a beginning personal theory of counseling. Prerequisite: 413-501.

413-681 PSYCHOLOGY OF READING 2 Cr. Understanding the principles, methods and techniques of developmental reading, the psychological as well as the physical and environmental factors affecting the reading process are considered; the assessment of reading abilities including rate, level, and comprehension; reading tests are surveyed and their diagnostic value studied; and the application of these understandings in programs of remedial reading and to study learning skills.

413-690 APTITUDE AND ACHIEVEMENT APPRAISAL 2 Cr. Selection, interpretation, and use of tests and inventories for teachers and counselors. Study of achievement, aptitude, interest and personality tests with experience in the interpretation of results. Prerequisite: 413-501 or 413-629 or 212-264, senior status.

413-691 THEORIES OF CAREER DEVELOPMENT 2 Cr. A study of the psychology of work including career development, the meaning of work, job satisfaction and factors in career choice. Prerequisite: 413-501, Senior or graduate standing.

DISTRIBUTIVE EDUCATION

416-304 INTRODUCTION TO

TEACHING — DISTRIBUTIVE EDUCATION 3 Cr. A methods course correlated with guided experiences involving directed observation and gradual assumption of teaching responsibilities in local schools. Includes the development of lesson plans and teaching aids. Prerequisites: 421-422, 421-303, overall grade point average of 3.25.

416-404 CURRICULUM DEVELOPMENT — DISTRIBUTIVE EDUCATION 5 Cr. Development of an orderly procedure for the identification of concepts, generalizations and instructional units to be used in teaching. Course outlines; analysis of content; lesson planning; evaluation; management. Prerequisite: 416-304, overall grade point average of 3.25.

416-408 STUDENT TEACHING — DISTRIBUTIVE EDUCATION 8 Cr. Directed teaching and community experiences in selected off-campus schools. Prerequisite: 416-404, 416-304.

416-488 INTERN TEACHING DISTRIBUTIVE EDUCATION 8 Cr. An alternate method of obtaining student teaching experience on both the high school and post high school levels. Teacher interns receive a license to teach and salaried appointments in cooperating school systems for one full semester.

EDUCATION

421-205 A, B, C, D, E, F, G PROFESSIONAL TEACHER EDUCATION SEMINAR 12 Cr. A continuing seminar and teaching laboratory. Provides substantial information and guidance for the developing teacher. Development of the role of the teacher and controlled practice in teaching.

421-280 READING IMPROVEMENT

2 Cr. Skill instruction in reading study skills. Application of skills to student's textbooks and materials.

421-303 EDUCATIONAL PSYCHOLOGY 2 Cr. Introduction to the psychological aspects of the educative processes. Emphasis on application of basic psychological principles to teaching. Focus on learner, learning process, and the teacher as an agent for change. Prerequisite: 479-110.

421-422 PRINCIPLES OF SECONDARY EDUCATION 2 Cr. The evolution, status, and trends of secondary education. Needs of our democratic society; philosophy, organizational problems, curriculum development, and the responsibilities of the individual teacher as related to students before they begin student teaching. Prerequisite: 479-110.

421-495 PERSONAL LEARNING EXPERIENCE 2 Cr. An experimental program for juniors and seniors. By permission of program directors. Each student selects an area of life which involves ethical decision and investigates that decision-making process. The group enrolled for this experience meets with the directors twice a week for direction, discussion, and criticism. Self-evaluation paper at the close of the course, which is submitted to the critique of the directors and other members of the learning experience.

421-505 HISTORY OF EDUCATION 2 Cr. Elementary, secondary and higher education in the U.S. from the early colonial period to the present time.

421-522 SECONDARY EDUCATION SEMINAR 2 Cr. For post-student teaching, discussion of the evaluation, status, and trends of secondary education. The experiences of the students' teaching related to the needs of our

democratic society; philosophy, organization problems, curriculum development; and the responsibilities of the individual teacher.

421-541 CLASSROOM EVALUATION 2 Cr. Types of tests and test questions; the interpretation of test scores and grades by means of simple statistical procedures; methods of grading manipulative work and assigning final grades.

421-590 MENTAL HEALTH IN THE SCHOOLS 2 Cr. A study of the total school community in terms of factors and dynamics contributing to the development or hindrance of the mental health of students, staff, administration, parents. Prerequisite: Junior or senior standing.

421-623 CONTRACT AS A TEACHING-LEARNING TOOL 1-3 Cr. Historical antecedents and current developments in the use of the contract idea as a part of the educational process. Emphasis will be on the development of learning contracts for on-the-job utilization.

421-630 EDUCATION FOR CHILDREN WITH SPECIAL LEARNING NEEDS 2 Cr. This course examines the characteristics of those students who are slow learners due to below average intelligence, learning disabilities, cultural and social differences, emotional problems, and other causes, and considers the implications for educational practice. Prerequisite: Senior or graduate standing.

421-641 EDUCATIONAL EVALUATION 2 Cr. Testing, the interpretation of tests by means of simple statistical procedures; methods of evaluating educational programs.

421-650 DRUG EDUCATION FOR

TEACHERS 2 Cr. A series of learning experiences designed to provide educational personnel with pertinent information, knowledge and data concerning the nature, use and abuse of drugs in contemporary society. The course is designed to review the contemporary drug scene and provide educators with insight concerning the problem as well as alternative solutions to this problem. Prerequisite: Senior or graduate level standing.

421-670 CONFERENCE LEADING 2 Cr. Study of teaching. Study and practice of the principles and techniques of conference leading as an instructional device in vocational education. Prerequisite: 421-205 or equivalent.

421-681 AMERICAN HIGHER EDUCATION 2 Cr. An introduction to the ramifications of the American system of higher education including history, philosophy, administration, curriculum, students, teachers, and demands for employment. Undergraduates by permission of the instructor only.

421-682 READING METHODS — SECONDARY SCHOOL 2 Cr. Technical information on the reading processes, self-concept and reading and specific classroom reading problems. Construction of Directed Reading Activities, Informal Reading Inventories, Reading Study Guides, readability checks, SQ32 study skills, vocabulary development and comprehension materials. Prerequisite: Junior or senior standing or instructor's approval.

421-685 PSYCHOLOGY OF ADULT EDUCATION 2 Cr. Offers a global view of the philosophy, purpose and practice in various programs of adult education and an examination of the characteristics of the adult learner plus a profile of his ego, intelligence, and development.

SPECIAL EDUCATION

431-185 INTRODUCTION TO EDUCATION OF HANDICAPPED YOUTH 3 Cr. Introduction to educational programs for exceptional students, with emphasis on the educable mentally retarded (EMR).

431-480 STUDENT TEACHING WITH HANDICAPPED YOUTH 8 Cr. Directed teaching and community experiences in selected off-campus schools with normal and handicapped adolescents. Prerequisite: 431-662, 431-661.

431-555 ISSUES IN SPECIAL EDUCATION 2 Cr. Acquaintance with current and controversial issues in special education. Prerequisites: 431-185, 479-562.

431-560 EDUCATION OF HANDICAPPED YOUTH: METHODS AND MATERIALS 3 Cr. Design, development and content of curriculum for secondary educable mentally retarded (EMR) students; materials and methods of presentation. Prerequisite: 431-185, 479-562.

431-561 EDUCATION OF HANDICAPPED YOUTH: EDUCATIONAL MANAGEMENT 3 Cr. A systematic approach to develop skills to diagnose, teach, and organize special education programs. Instructional activities are designed to develop in students the requisite skills to ameliorate behavior and learning problems of handicapped youth. Prerequisites: Instructor's permission, and concurrent enrollment in 431-560 and 431-562.

431-562 CLINICAL EXPERIENCE WITH HANDICAPPED YOUTH 2 Cr. On campus work and study experiences in educational settings with handicapped youth. This course may be repeat-

ed. Prerequisite: Instructor's permission, concurrent enrollment in 431-560 and 431-561.

431-581 LEGAL RIGHTS OF HANDICAPPED 2 Cr. Current litigation, civil commitment, criminal proceedings, federal and state statutes, and civil rights regarding the handicapped student and adult. Prerequisite: 431-185, 479-562.

431-660 PRACTICUM IN SPECIAL EDUCATION 2 Cr. Off campus work and study experiences in educational settings with handicapped youth. This course may be repeated. Prerequisites: Concurrent enrollment in 431-661 and 431-662. Also instructor's permission.

431-661 CAREER EDUCATION FOR HANDICAPPED YOUTH 3 Cr. Techniques for interviewing, planning, and directing school programs of career choice with handicapped adolescents. Class activities will include community job surveys, work placement and work supervision. Prerequisite: 431-660

431-662 CLASSROOM MANAGEMENT TECHNIQUES 3 Cr. Techniques for motivating handicapped youth, individual and group discipline, behavior modification, educational organization, evaluation, and communication to enhance the learning of pupils.

VOCATIONAL REHABILITATION

459-101 INTRODUCTION TO REHABILITATION 3 Cr. An introduction to serving handicapped and disadvantaged persons. Philosophy, history, legislation, concepts and processes, and careers in rehabilitation services.

459-202 COMMUNITY RESOURCES

3 Cr. A review of community resources and their respective role in rehabilitation. Prerequisites: 459-101 or 431-185.

459-205 REHABILITATION PRACTICUM 4 Cr. Actual exposure to disability groups, direct and extensive contact with people working in rehabilitation, and practical experience working in different types of agencies serving clients. Prerequisite: 459-202 or consent of instructor.

459-300 REHABILITATION OF THE PHYSICALLY DISABLED 3 Cr. A study of the psychological, social, and vocational implications of various physical disabilities and the relationship of these implications to preparing persons for the world of work. Prerequisite: 308-220.

459-310 VOCATIONAL EVALUATION 4 Cr. Theories and techniques of assessment and vocational exploration of vocationally handicapped persons utilizing the technology of vocational education. Prerequisite: 459-202 or consent of instructor.

459-311 WORK ADJUSTMENT PROCESS 3 Cr. Theories and techniques of work adjustment and the utilization of work adjustment as a modality in the treatment of vocationally handicapped individuals. Prerequisite: 459-202.

459-320 REHABILITATION OF THE CHEMICALLY DEPENDENT 3 Cr. This course involves the vocational rehabilitation of alcohol and drug misusers for rehabilitation and educational personnel. Emphasis is on information about the current drug and alcohol scene and the development of communication skills to provide abusers with alternate non-addictive life styles which includes vocational rehabilitation. Prerequisite: 459-101 or consent of instructor.

459-325 REHABILITATION OF THE SENSORY DISABLED 3 Cr. An introduction to the deaf, blind, and deaf-blind and their rehabilitation.

459-400 REHABILITATION SEMINAR 1 Cr. A study of the major current issues and problems confronting the field of vocational rehabilitation. Prerequisite: Senior rehabilitation students or consent of instructor.

459-401 PRINCIPLES AND TECHNIQUES OF CASELOAD MANAGEMENT 2 Cr. Study and application of the principles and techniques of caseload management used in social service agencies with emphasis on rehabilitation agencies.

459-402 REHABILITATION FACILITIES ADMINISTRATION 3 Cr. A survey of the principles and practices involved in the administration and management of rehabilitation facilities.

459-403 PSYCHOLOGICAL HANDICAP AND WORK 3 Cr. An examination of treatment methods for the emotional problems of rehabilitation clients commonly referred to psychiatric rehabilitation hospitals, mental health centers, workshop facilities and rehabilitation agency caseloads. Emphasis is on rehabilitation worker actions for particular client problem behaviors in vocational situations. Prerequisite: 479-561 or consent of instructor.

459-410 PLACEMENT PROCESS WITH THE HANDICAPPED 3 Cr. Study and application of principles and techniques of the placement and follow-up process typically seen in social and rehabilitation agencies.

459-505 COMMUNICATIONS WITH THE DEAF 3 Cr. Basic course in manual communication with the deaf.

Overview, history, sociology, and psychology of the deaf, history of manual alphabet, finger spelling, basic manual vocabulary.

459-506 MANUAL COMMUNICATIONS II: AMERICAN SIGN LANGUAGE (AMESLAN) 3 Cr. A course in American Sign Language (AMESLANO, the preferred language of most deaf Americans.) Prerequisite: 459-505.

459-585 MENTAL RETARDATION 2 Cr. An introduction to the etiology of mental retardation; the psychological, educational, social, and vocational aspects; and adjustment techniques used in working with mentally retarded persons.

459-680 PRINCIPLES OF REHABILITATION COUNSELING 2 Cr. An introduction to the principles of rehabilitation counseling and their application to the total rehabilitation process. Emphasis is on the principles and the procedures practiced in the state-federal system of vocational rehabilitation.

459-x98 FIELD EXPERIENCE — VOCATIONAL REHABILITATION 2 Cr. Off-campus work and study in an approved position to better understand the challenges and potentials of various rehabilitation type careers. Prerequisite: 459-101.

VOCATIONAL EDUCATION

469-502 PRINCIPLES OF VOCATIONAL, TECHNICAL AND ADULT EDUCATION 2 Cr. Philosophy, organization and administration of vocational and adult education in the nation with special attention given to the Wisconsin program.

469-534 TASK ANALYSIS 2 Cr. Study of analysis of activities for instructional purposes and for personnel work. Jobs operations, information topics, blocking, custom occupations, service occupations, checking level, progression factors defined.

469-560 COOPERATIVE OCCUPATIONAL EDUCATION PROGRAMS 2 Cr. Philosophy, organization, coordination and teaching techniques of cooperative education programs in the various vocational areas. Roles, responsibilities and duties of the cooperative teacher coordinator. Prerequisite: 459-502.

469-608 ISSUES IN VOCATIONAL, TECHNICAL AND ADULT EDUCATION 2 Cr. An in-depth study of contemporary issues affecting vocational, technical and adult education. Possible solutions or alternatives will be proposed.

469-674 ADULT EDUCATION 2 Cr. Philosophy and history of adult education movement in the United States. Technique of teaching adults including psychological factors, methods, adult interests and characteristics.

PSYCHOLOGY

479-100 PSYCHOLOGY SEMINAR I — FOUNDATIONS 1 Cr. The first of a continuing seminar will be a gathering of 15-20 students beginning their study of human behavior at Stout. Each member will present information and ideas from courses, from campus and world learning experiences. Each will assess, with the help of a qualified person, his own aptitudes, interests and characteristics comparing them with those needed in psychology. An individual program plan will be developed. The seminar will be repeated until all in-

introductory psychology courses have been successfully completed and an acceptable program has been planned.

479-110 GENERAL PSYCHOLOGY 3 Cr. An introduction to the field of psychology as an academic discipline and as an applied human science. Primary emphasis is placed on the topics of scientific methodology in psychology, learning, perception, motivation, development, individual differences, mental health, cognitive behavior, the physiological basis for behavior, and on the application of psychological principles to human experience.

479-120 PSYCHOLOGY: ITS HISTORY AND SYSTEMS 3 Cr. A comprehensive survey of the history of psychology and of the basic systems which have developed into modern American psychology. Treatment is given both to the philosophic development of psychology and to the evolution of psychology as a behavioral science. A major emphasis is placed on the development of psychology in the 19th and 20th Centuries in western Europe and the United States with the schools of thought: Structuralism, Functionalism, Behaviorism, Gestalt Psychology, and Dynamic Psychology receiving primary considerations. The state of modern psychology is considered and the contributions of a number of contemporary psychologists are examined.

479-150 MAN: A COURSE OF STUDY 3 Cr. The course will address the question of "Who am I?" from a contemporary horizon where concerns of psychology intersect biology, philosophy, sociology, anthropology, history, and religion. From there we move toward possible answers to man's perennial questions about himself and his future through readings and discussions of key works. The over-all objective of the course will be to help the student construct, for himself, a viable answer to the classical question "Why am I?"

479-190 PSYCHOLOGICAL METHODS I 3 Cr. This course introduces the student to research in the behavioral sciences. Observational, clinical, historical, correlational, descriptive, and experimental techniques are introduced and evaluated. Through the study of contemporary psychological research, the student gains evaluative principles which will enable him to be an intelligent research consumer.

479-251 CHILD PSYCHOLOGY 3 Cr. A study of the total psychological development of children emphasizing age groups spanning the pre-school and pre-pubescent child and methods for scientific measurement and understanding of child behavior. Prerequisite: 479-110.

479-260 PERSONALITY AND MENTAL HEALTH 3 Cr. An introduction to the areas of psychology which are concerned with the recognition of the positive principles of mental health and their application to human behavior. In addition, an examination is made of a variety of theories which are representative of the major views of leading thinkers on the subject of personality and personality development.

479-300 PSYCHOLOGY SEMINAR II 1 Cr. This will be the second-level seminar for the psychology program. The first level builds a foundation and helps students know whether or not psychology is for them. The second-level or "Synthesis" seminar is for those students who have decided definitely to complete the psychology program at Stout. It will provide a place for students and faculty to meet on a weekly basis to discuss topics of common interest arising from each person's total program. Prerequisite: 479-100.

479-390 EXPERIMENTAL PSYCHOLOGY 3 Cr. This course serves as an introduction to the methodology and content of experimental psychology.

This course is built around the concept of behavioral objectives which are used for guiding the learning process, and evaluating that process. Upon successful completion of this course, the student will be capable of formulating a psychological problem, designing an experiment to investigate this problem, planning all aspects of the experimental process, conducting a well run experiment, analyzing and interpreting results and evaluating the experiment. Prerequisite: 354-130.

479-400 PSYCHOLOGY SEMINAR III 1 Cr. The final portion of the continuing seminar series for psychology majors. Each student will develop and conduct an original investigation and report his findings in a formal research paper as an indication of his achievement of program competencies. Other activities will center around the student's movement into graduate school and/or the employment market. Prerequisite: 479-300.

479-530 PSYCHOLOGY OF LEARNING 3 Cr. A course designed to acquaint the student with the principles of learning drawn from experimental and theoretical psychology. These principles are demonstrated as they apply to animal and human learning. Modern viewpoints toward theories of learning are emphasized.

479-540 PSYCHOLOGY OF INDIVIDUAL AND GROUP DIFFERENCES 3 Cr. Nature and extent of differences in individuals and groups are studied. Intelligence, achievement, aptitudes, interests, attitudes, and general personality are the major differences included. Race, sex, nationality, social class and age in relation to individual differences are studied.

479-552 ADOLESCENT PSYCHOLOGY 3 Cr. The physical, emotional, social, moral, and intellectual development of secondary school youth. Pre-

requisite: 479-110.

479-561 ABNORMAL PSYCHOLOGY 3 Cr. A study of more serious mental disturbances. Emphasis on the growing importance of mental disorders and on their early detection and referral.

479-562 PSYCHOLOGY OF THE EXCEPTIONAL CHILD 2 Cr. Guidance of the learning and development of children who deviate from the normal; the mentally retarded, gifted, socially and emotionally disturbed, and those with visual, speech and orthopedic problems.

479-570 ASSERTIVE TRAINING PROCEDURES 2 Cr. Training in interpersonal behavior in which persons defend their legitimate rights without violating the rights of others.

479-571 THE PSYCHOLOGY OF MARRIAGE AND THE FAMILY 2 Cr. A study of the interpersonal relations involved in dating, mating, and family collaboration with growing awareness of patterns for self-integration.

479-579 PUBLIC RELATIONS 2 Cr. Defines the public, objectives, and media of public relations in industry and education. Provides practice with such tools as news stories and features. Each student develops a simulated publicity program.

479-581 INDUSTRIAL PSYCHOLOGY 2 Cr. A survey of the application of psychological principles of man's vocational pursuit. Emphasis is on individual differences and group behaviors which are involved in personnel selection, human factors engineering, industrial safety, motivation, personnel training, and consumer behavior. Course material is based primarily upon the latest behavioral science research in the field of industrial psychology. Prerequisite: 479-110.

479-582 PERSONNEL MANAGEMENT 3 Cr. Organization and coordination of personnel practices and methods. Consideration given to communication, employment, orientation and training, working conditions, supervision, performance evaluation, collective bargaining, salary administration, health and recreation.

479-632 PERCEPTION 3 Cr. This course serves as an introduction to human perception. The content of the course is structured around an information processing model, with the sensory and memory facilities considered as information systems. The student will analyze perceptual research, become familiar with classical and modern psychophysical techniques and conduct experimentation in human information processing.

479-690 PSYCHOLOGICAL MEASUREMENT 3 Cr. An introduction to the assumptions, models and applications of measurement techniques in behavioral science. Test analysis, item analysis, reliability, and validity are extensively covered. The course also introduces the student to prediction and measurement of attitudes and opinions.

479-x98 FIELD EXPERIENCE — PSYCHOLOGY 2 Cr. Off-campus work and study in an approved position to better understand the major concepts of psychology as they are applied to help solve and prevent human relations type problems.

ACADEMIC AFFAIRS— TRANSDISCIPLINARY

500-100A,B,C,D APPLIED STUDENT LEADERSHIP .5 Cr. Applied leadership techniques in interpersonal communications and organizational dynamics developed through classroom

experience and practice. This course cannot be taken by anyone who has taken 500-100.

500-500 INTRODUCTION TO FUTURES STUDY 2 Cr. Introduction to various methods of future prediction, thereby orienting his thinking towards future alternatives. In addition, various major areas of human activity will be examined in order to study the major future problems they will be examined in order to study the major future problems they will face and the impact these problems will have on the student's lifetime.

500-510 INTRODUCTION TO WOMEN'S STUDIES 2 Cr. An examination of the experience of women in American society, their past and present contributions and roles, and perspectives on the future.

500-525 ADVANCED FUTURES STUDY 1 Cr. The application to the student's program area of the strategies of futures study culminating in a student-designed futures study. Prerequisite: 500-500.

500-555 SOLVING PROBLEMS 2 Cr. Transdisciplinary problem solving through acquaintance with and practice in the use of systematic approaches to real problems.

LEARNING RESOURCES

MEDIA TECHNOLOGY

600-504 ELEMENTARY PHOTOG-

RAPHY 2 Cr. Fundamentals of photography including aesthetics, basic theory, camera operation, film selection, lighting, roll film processing, contact printing, enlarging and print finishing. Student must provide his own camera.

600-535 FILM: HISTORY AND APPRECIATION 3 Cr. Traces the evolution of the motion picture film as a medium of mass communication and aesthetic expression; contributions of noted film producers are identified.

600-560 AUDIO-VISUAL COMMUNICATIONS 2 Cr. Methods of evaluating and using audio-visual materials effectively in teaching. Experience in operating equipment; basic technique of media preparation.

600-561 PREPARATION OF AUDIO-VISUAL MATERIALS 2 Cr. Planning, designing and producing bulletin, felt, hook-and-loop, and slide/tape presentations; charts, graphs, posters, models, mock-ups, transparencies; mounting, laminating and display techniques. Prerequisite: 600-560.

600-593 TELEVISION PRODUCTION TECHNIQUES 3 Cr. Production of television programs in cooperation with students in 391-554. Each student will gain experience as director, technical director, cameraman, floor manager, audio controlman, telecine operator, and lighting director. Includes related technical information.

600-605 ADVANCED PHOTOGRAPHY 2 Cr. Advanced monochromatic photography including aesthetics, ad-

vanced theory, view camera techniques, studio lighting, selection of photographic materials and equipment, sheet film processing, specialized processes and techniques. Prerequisite: 600-504.

600-630 FILM/TAPE PRODUCTION FUNDAMENTALS 3 Cr. Instructional film, audio tape, and videotape production fundamentals. Designed for Audio-Visual Communication major generalists. Should not be taken by those planning to take 391-554, 600-593, or 600-636.

600-636 FUNDAMENTALS OF MOTION PICTURE PRODUCTION 3 Cr. Fundamentals of Super 8mm and 16mm film production. Production planning, cost estimating, visual continuity, shooting, animation, editing, sound recording, titling, laboratory services, and other technical problems of production. Individual and group projects.

600-645 COLOR PHOTOGRAPHY 2 Cr. Aesthetics, color theory, film selection, lighting, copy techniques, slide duplication, reversal and negative color film processing, and color printing. Prerequisite: 600-504.

600-694 INSTRUCTIONAL COMMUNICATIONS SYSTEMS 2 Cr. Application of electronic communications systems used to solve educational problems. Audio systems including microphones, tape decks and duplicators, language labs and intercommunication equipment; multi media systems including information retrieval, multiple response, and simulators. Prerequisite: 600-560.

INDEX

- Academic Affairs-Transdisciplinary 149
Accounting 90
Accreditation 2
Add/Drop Policy 18
Admission Procedure 11
Adult Special Students 12
Advisement Program 22
American Industry 30
Anthropology 114
Apparel, Textiles and Design 41, 52, 102
Applied Mathematics 56, 127
Architecture 85, 86
Art 58, 70, 114
Art Education 61, 140
Art Metals 116
Athletics 23
Audio Visual 150
Automotive Technology 80

Biology 71, 117
Blocks 51
Business Administration 28, 71, 90

Career Planning 22
Chemistry 71, 119
Child Development and Family Life 39, 98
Clothing, Textiles and Design 41, 102
Coaching Certification 74
Community 10
Computer Science 71, 127
Concentration 2, 34
Continuing Education 13
Counseling Center 22
Counseling and Personnel Services 141
Course Descriptions 79
Credit by Examination 13

Deferred Admission 11
Deposits 16
Dietetics 42
Distributive Education 141
Dramatics 21

Early Childhood Education 44
Economics 71, 121
Education 2, 142
Electronics 79, 80
Energy 79
English 72, 123
Entrance Requirements 22
Extension Services 13

Faculty 10
Facilities 10
Falsification of Records 19
Fashion Institute of Technology 14
Fashion Merchandising 46, 103
Fees 15
Field Experience Program 13
Financial Aids 19
Financial Information 15
Food Service 16
Food Service Administration 47
Food Services and Nutrition 105
Forensics 21, 138
Fraternities 21
French 125
Freshman Orientation 22

General Industry 31
Graduation Requirements 17
Graduate College 14
Graphic Communications 85

Habitational Resources 109
History 72, 126
Home Economics in Business 50
Home Economics Education 51
Home Economics General 54
Hotel and Restaurant Management 54, 111
Housing 16
Human Development and Family Living 98, 107
Hydraulics 82

Independent Studies Program 12
Industrial Design 59
Industrial Education 29
Industrial Management 88
Industrial Teacher Education 97
Industrial Technology 32
Industrial Work Experience 13
Interior Design 59
Intramural Athletics 21

Journalism 72, 123
Learning Resources 149
Library 10

Marketing and Distributive Education 63
Materials and Processes 93
Mathematics 72, 129
Mechanical Design 87

Media Technology 149
 Merrill-Palmer Institute 13
 Metals 93
 Minnesota Students 15
 Minors 2, 70
 Motion Picture Production 150
 Motor Vehicles 17
 Music 130

Newspaper, Student 21
 Overload Policy 18

Philosophy 131
 Photography 86, 150
 Physical Education 73, 132
 Physical Facilities 10
 Physics 73, 135
 Pigeon Lake 14
 Placement Services 22
 Plastics 93, 96
 Political Science 136
 Printing 85
 Pneumatics 82
 Printmaking 116
 Probation 17
 Processes 93
 Professional Teacher Education 140
 Psychology, 65, 73, 146
 Publications 21

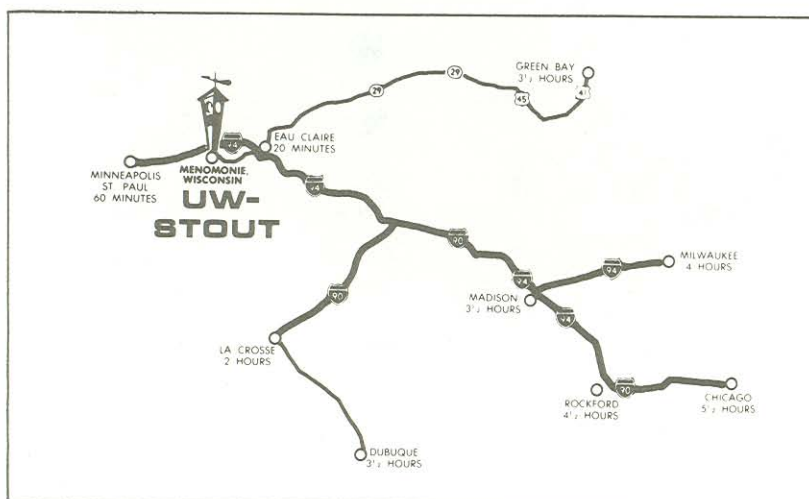
Recreation 21
 Refunds 16
 Residence Halls 16

Safety 73, 81
 Scholarships 21
 Senior Citizens 15

Social Work 137
 Sociology 73, 137
 Sororities 21
 Spanish 126
 Special Courses 12
 Special Education 144
 Special Schools 14
 Specializations 52
 Specialized Technology 31
 Speech 74, 138
 Split Program 16
 Sports 21
 Students 10
 Student Activities 21
 Student Center 22
 Student Government 21
 Summer Session 14
 Suspension 17

Teacher Certification 18
 Technical Education 35
 Television Production 150
 Textiles 102
 Transfer Policy 11
 Transportation 16, 79
 Veterans 12
 Veterans Service 22
 Vocational Certification 32
 Vocational Education 37, 146
 Vocational Rehabilitation 67, 144

Weaving 105
 Withdrawal Procedure 19
 Woods 93, 94
 Yearbook 21



Office of Admissions
University of Wisconsin - Stout
Menomonie, Wisconsin 54751

NON-PROFIT ORGANIZATION
U.S. POSTAGE
PAID
MENOMONIE WI 54751
PERMIT NO. 3

